

Creating Better Projects through Rethinking Architectural Practice

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We certify that we have read this Doctorate Project and that, in our opinion, it is satisfactory in scope and quality in partial fulfillment for the degree of Doctor of Architecture in the School of Architecture, University of Hawai'i at Mānoa.

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Abstract

This doctoral project outlines the evolution of architectural practice, presents standards that have influenced the practice of architecture and the built environment, and introduces an alternative model to providing better projects. Because the built environment is largely composed of architecture, the understanding of architectural practice is important in the quest for creating better projects. The processes, strategies, and standards by which architects practice ultimately affect each project. How can the practice of architecture enhance environments for the end user, lead to an improved means of providing their service, and create better value architecture?

The research for this project consists of three parts. Section one outlines the historical evolution of architectural practice from the “master builder” to the contemporary architect. The evolution investigates the changing roles of the architect over the years, the purpose of the architect in society, and the development of a professional practice of architecture. This section begins to evaluate the social implications that affect the design and production of the built environment.

The second portion questions how the practice of architecture can create better projects. Part two sets the criteria for project quality, determined by defining standards that make a project “better”. In addition, this section will investigate current influences in architectural practice that impact project quality. The five influences I introduce are: the client and consumer, industry members, professionalization, the design and delivery process, and education and training. The goal of this section is to understand the architect’s challenges within practice that affect the quality of a built project.

Section three of this study is a compilation of the research that rethinks the practice of architecture, formulates an alternative path for creating better projects, and poses further questions for the continued evolution of the architect.

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I. Introduction

*"Architecture is a profession, an occupation, a business and a practice."*¹ –Jane Collier

"The private practice of architecture is a business in every sense of the word, and the practicing architect is a business person as well as a professional." –Robert J. Piper

*"Let it be simply assumed that Architecture is an art; and an important one at that."*²
–Edward Winters

*"The fundamental point is a simple one: the design of our built environment emerges from collective action."*³ –Dana Cuff

*"There are more disillusioned, alienated, disappointed men and women in architecture than in any other major profession,"*⁴ –Robert Gutman

*"Unable to secure a monopolistic control over building, architecture is extremely vulnerable to economic fluctuations. The vulnerability is the source of continual controversy over what professional firms can and cannot do to keep a foothold in the market without jeopardizing professional ethics and integrity."*⁵ – Judith Blau

*"The key condition to accomplish design quality is the architect's attitude. If the architect's attitude is one of wondering why or why not, then there is potential for quality design...If you want to change what exists, look at the conditions for the development and find a condition to change for everyone/s benefit. In my opinion, it is the thinking of an architect that initiates the quality design and the profitability."*⁶ –Donald Goo

¹ Judith R. Blau, *Architects and Firms: A Sociological Perspective on Architectural Practices* (Cambridge: The MIT Press, 1984), quoted in Nicholas Ray, ed., *Architecture and Its Ethical Dilemmas* (London: Taylor & Francis, 2005), 89

² Paul Davies and Torsten Schmiedeknecht, eds., *An Architect's Guide to Fame* (Oxford: Elsevier/Architectural Press, 2005), 255.

³ Dana Cuff, *Architecture: The Story of Practice* (Cambridge, Mass: MIT Press, 1991), 13.

⁴ Robert Gutman, *Architectural Practice: A Critical View* (Princeton, N.J: Princeton Architectural Press, 1988).

⁵ Blau, *Architects and Firms*, 12.

⁶ Donald Goo, April 7, 2009.

The architectural profession has remained marginally influential to our everyday surroundings.⁷ This portrayal of architectural practice by John Portman is the reality of the profession's impact on the built environment. "All too often, the basic design concept becomes a matter of routine, leaving the architect to translate other people's decision into technical drawings."⁸ The built environment is a collaboration of the client, landowner, developer, engineers, builders, manufacturers and financiers. In addition, planning laws and regulations, existing environments, and inhabitants in which new projects must fit also affects a project's final product.⁹ The profession is becoming more complex and demanding collaboration because of increased technology, complexity of construction, and competition from design and building professionals. With the building process demanding collaboration and increase in expertise, how can the architect positively influence the design and construction of future projects?

The architectural process is a complex craft resultant of numerous interacting forces and is influential to the built environment.¹⁰ The practice of architecture has well established and well proven systems to standardize the profession, deliver its services, conduct its education and training, and promote its cause. However, the success of these systems need to be further explored and challenged, so the architect can be in an ideal position to create more valued architecture. Thomas Fisher, the Dean of the College of Architecture and Landscape Architecture at the University of Minnesota raises the point that architectural practice can be compared to a design problem, and that practice is just as much a design problem as creating a building.¹¹

This Doctorate project outlines the evolution of architectural practice from its early development in various parts of the world to contemporary practice in the context of the United States; noting the particular major influences which have affected a projects process. Ultimately

⁷ John Calvin Portman, *The Architect as Developer* (New York: McGraw-Hill, 1976), 4.

⁸ Ibid.

⁹ Mark Crinson and Jules Lubbock, *Architecture: Art or Profession? : Three Hundred Years of Architectural Education in Britain* (Manchester: Manchester Univ Pr, 1994), 2

¹⁰ Andrew Ballantyne, ed., *What Is Architecture?* (London: Routledge, 2002), 2.

¹¹ Andy Pressman, *Professional Practice 101: Business Strategies and Case Studies in Architecture*, 2nd ed. (Hoboken: Wiley, 2006), 272.

this project uncovers the issues of architectural practice that hinder creating projects of value to encourage the rethinking of architectural practice.

Lastly, I would like to define the limitations of this project. The evolution of architecture and practice presented is a brief synopsis of the critical events that shaped the profession of architecture and is not intended to be a comprehensive study on the history of practice.

Why Study Architectural Practice?

Architectural practice is continually evolving. Every century has posed new challenges and opportunities for the profession. The term “practice” implies performance or professional activities. Cuff, the author of *Architecture: the Story of Practice*, attempts to explain architectural practice by asking, “what are architecture’s professional activities and how are they customarily performed?”¹² Cuff explains architectural practice as “emerging through complex intersections among interested parties, from which the documents for a future building emerge.”¹³

The practice of architecture has been influenced by societal change, economics, competition, government, laws, education, and the client. In the past 50 years alone architecture has become more complex with added responsibilities of, “new building technology and communication systems, computerized design and delivery, the Americans with Disabilities Act, environmental pollution, and energy consumption.”¹⁴ What is next for the architect and the role that the profession will play in society, and how will the architect deal with increasing complexities and responsibilities?

One reason architectural practice is taking on more responsibility is competition. Competition in the work place, competition between competing companies for the commission of projects, and competition between building industry members impact architectural practice and project quality. In order to compete amongst themselves and with other industry members, architects

¹² Cuff, *Architecture*, 4.

¹³ Ibid.

¹⁴ Pressman, *Professional Practice* 101, 33.

are becoming more specialized. Is specialization giving architectural practice an added value over engineers and contractors? How can architects be more valuable than other industry members?

Architectural practice is a collaborative process set within a competitive alliance. The architect (designer), the contractors (builders), and the financier of the project- typically referred to as the client are all grappling for position of power, control, and ultimately profit. The client, with the power to make the final decision, largely influences the project. How will the architect be able to guide the client to make decisions that will result in better quality projects?

How architects run their practice directly affects projects they design as well as the projects designed by engineers and contractors. The term by Jane Collier of the 'assemblage of practices' referred to as the construction industry, architects and engineers, and client all strategize ways of servicing their business more effectively and efficiently to deliver better results for improved profitability. Encroachment from other building professionals to claim a bigger stake of the profit has historically been a long standing tradition and will continue to shape not only the practice of architecture, but the projects that come through its endeavors.

The changing face of the delivery process influences architectural practice and its projects. For example, the design-build method allows contractors to take on the leadership role; providing in-house design services in addition to the construction. This essentially eliminates the role of the architect in the project process. The traditional method of design- bid-build by 2010 is speculated to no longer be the dominant method for project delivery.¹⁵ The contractors and engineers will arguably be the next generation of architects because of the changing dynamics within the delivery process. How can the architect begin to take back the leadership role that it once held?

The leadership role of the architect has dwindled as industry members provide cost and construction expertise to the client. How can architecture provide their greatest asset-design-

¹⁵ Andrew Thomas, *Design-Build*, 1st ed. (West Sussex: Academy Press, 2006).

while still accruing knowledge of cost and construction? Can education and practice be reformatted to provide cost and construction expertise?

To refine practice, Robert Gutman, a Professor and researcher of architecture believes there is a need to, "... link organizational effectiveness and the other conditions making for stability and financial success with services and buildings of the highest quality."¹⁶ Design strategies and design theories will continue to be a major focus in shaping the architecture that is built. However, understanding architectural practice and the influences that affect its current state will enable architects to start engaging in a practice that provides a larger number of better projects.

¹⁶ Gutman, *Architectural Practice*, 85.

II. Evolution of Architectural Practice

Architecture has influenced human society for thousands of years. The earliest recorded traces of architecture can be dated back 500,000 years ago to the great cave of Escale in southern France. The caves which served as a shelter for Homo erectus are the first documented find of a natural shelter.¹⁷ Terra Amata an encampment of huts, estimated to date back to 400,000 years ago, was the first recorded artificial structure made of branches and stone. Significant to this era was that architecture was not a product of service, developers, theory, or economy; but was rather a response to the basic human need for shelter.

Architecture became more sophisticated as society began to change. The advent of civilizations that brought communities of people together to form a city-state sought the need for builders and architects to construct places to live and worship. Cities such as the ancient urban city of Mesopotamia required building expertise as they developed a large complex of temples.¹⁸ The architect and builder of ancient cultures during this era was essentially one in the same. The master mason or carpenter was the designer, assembled the labor and materials, estimated costs, managed the construction process, and erected the structures of the building.¹⁹ Architectural practice during ancient civilization combined all facets of the building industry from architecture, engineering, construction, to in some cases- occupation.

The term architect is derived from the Greek *arkhitekton*, *arkhi* translating to chief and *tekton*, meaning builder. Chief can further be defined as, “the head or leader of an organized body of people; the person highest in authority.”²⁰ Builder is a term more synonymous today with the engineer or contractor of the project. Builder is defined as, “one that builds, especially a person who contracts for and supervises the construction of a building.”²¹ The word architect was used

¹⁷ Spiro Kostof, *A History of Architecture: Settings and Rituals*, 2nd ed. (New York: Oxford University Press, USA, 1995), 21.

¹⁸ Judith R Blau, Mark La Gory, and John Pipkin, eds., *Professionals and Urban Form* (Albany: State University of New York Press, 1983), 51.

¹⁹ Roger K Lewis, *Architect?: A Candid Guide to the Profession* (Cambridge, Mass: MIT Press, 1985), 149.

²⁰ Wikipedia: The Free Encyclopedia, “Architect,” Wikipedia, <http://en.wikipedia.org/wiki/Architect> (accessed September 25, 2008).

²¹ Dictionary.com, “Builder Definition,” <http://dictionary.reference.com/browse/builder> (accessed September 25, 2008).

freely until 1897 when the term began to hold legal implications and requirements.²² Today, the term architect holds various meanings. The Merriam-Webster dictionary defines the architect as a person who designs buildings and advises in their construction,” and alternatively as, “a person who designs and guides a plan or undertaking.”²³ Additional usage of the term architect, unrelated to the building industry, has also emerged. The architect is now being referenced by the technology industry for software developers and computer specialists.

Classical Antiquity

Architectural practice as understood today did not formally occur until the 19th century, when professional organizations were formed to standardize the profession from education to ethics. However, the series of events that led to shaping the profession began during classical antiquity and the importance of architectural theory. Architectural theory in the words of Paul Allen Johnson is, “the channel through which distinct architectural beliefs, values, and attitudes are transmitted or actions are filtered, and out of which arise any qualities architecture is seen as having.”²⁴

The first theories on architecture were in the form of treatises. A treatise can be defined as, “a formal, lengthy, systematic discourse on some subject.”²⁵ Treatises and publications on architecture in latter centuries shaped the architect’s scope of work, professional and ethical responsibilities, and design methods. The first surviving theoretical text is traced back to classical antiquity with the influential treatise written in the mid 20’s B.C.E. by Marcus Vitruvius Pollio.

²² The American Institute of Architects, “History of The American Institute of Architects,” http://www.aia.org/about_history (accessed November 08, 2008).

²³ Merriam-Webster Online Dictionary, “Architect Definition,” Merriam-Webster, <http://www.merriam-webster.com/dictionary/architect> (accessed November 06, 2008).

²⁴ Paul-Alan Johnson, *The Theory of Architecture: Concepts, Themes & Practices* (New York: Van Nostrand Reinhold, 1994), 8.

²⁵ Wikipedia: The Free Encyclopedia, “Treatise,” Wikipedia, <http://en.wikipedia.org/wiki/Treatise> (accessed October 07, 2008).

Vitruvius was a military architect who presented Augustus Ceasar, with *De architectura*.²⁶ Known today as *The Ten Books on Architecture*, the treatise was an attempt to change the inadequacies of professionalism and education in the practice of architecture.²⁷ The books begin with, "... education and professional scope of the architect and the criteria of excellence in architecture."²⁸ *The Ten Books on Architecture* was a significant contribution to architectural practice as it served as references to future theoretical texts written about architecture and how buildings should be designed up until the 18th century.²⁹

Prior to Vitruvius' treatises on architectural theory, documented architecture focused primarily at technology and engineering. In his treatise, Vitruvius began to script the importance of architecture in human society and differentiated the role of the architect versus the role of the builder. Vitruvius described architecture and the art of building as the "generator" of civilization comparable to the discovery of fire and language. To Vitruvius architecture was the greatest of arts and knowledge. The byproduct of Vitruvius' characterizations of architecture eventually led to the importance of the architect in shaping the built environment.³⁰ From this point forward the architectural profession transformed itself from a technical pedagogy to an intellectual dialogue.³¹

The Renaissance Architect

The architect, from classical antiquity until the late 15th century, saw little influence from scholarly and academic work. The theory and profession of architecture was left uninfluenced as few referenced Vitruvius' ideals introduced fourteen hundred years ago. Prior to the 15th

²⁶ Indra Kagis McEwen, *Vitruvius: Writing the Body of Architecture* (The MIT Press, 2002), 1.

²⁷ Thomas Gordon Smith, *Vitruvius on Architecture* (New York: Monacelli Press, 2003), 9.

²⁸ Fil Hearn, *Ideas That Shaped Buildings* (Cambridge, Mass: The MIT Press, 2003), 1.

²⁹ McEwen, *Vitruvius*, 1.

³⁰ Hearn, *Ideas That Shaped Buildings*, 25.

³¹ Ibid.

century the builders of architecture were not concerned with an untested system for design or were able to translate the ancient language.³²

The architect prior to the 15th century had no type of formal training.³³ The works of architecture created during the Roman Empire, Byzantium, and Western Europe were based on a theory of architecture only knowledgeable to professional circles.³⁴ The first major works of self-proclaimed architects of the middle ages were monuments and grand buildings such as cathedrals, museums, and theaters. The architects of the middle ages were both the designer and builder.³⁵ Buildings were often constructed for religious or social purposes. The few that were developed served as the focal point of a city's attraction and grandeur.

The most influential architects of the 15th century Renaissance period that designed the palaces and grand buildings of the era came from the visual arts field- primarily being painters.³⁶ The constructing and solution of relatively simple structures was in the hands of experienced masons and craftsmen.³⁷ With more technical buildings, that were "unconventional" such as the Gothic cathedrals or Renaissance churches, collaboration between artist, master builder, and amateur engineer would take place.³⁸

In 1414, Vitruvius' *De architectura* was discovered in a monastic library. Humanist-scholars sought to interpret the treatise of Vitruvius which was a reaction of the, "cultural urge to revive the antique tradition in architecture."³⁹

³² Dora Wiebenson, ed., *Architectural Theory and Practice from Alberti to Ledoux* (Chicago: Architectural Publications, 1982).

³³ Crinson and Lubbock, *Architecture*, 180.

³⁴ Hearn, *Ideas That Shaped Buildings*, 2.

³⁵ Jean Gimpel, *The Cathedral Builders* (New York: Grove Press, 1961), quoted in Blau, *Architects and Firms*, 12

³⁶ Richard A. Goldthwaite, *The Building of Renaissance Florence: An Economic and Social History* (Baltimore, Maryland: The Johns Hopkins University Press, 1982), chap. 7, quoted in Gutman, *Architectural Practice*, 64

³⁷ Ibid.

³⁸ Robert Mark, *Experiments in Gothic Structure* (Cambridge, Mass: The MIT Press, 1984), chap. 1, quoted in Gutman, *Architectural Practice*, 64

³⁹ Hearn, *Ideas That Shaped Buildings*, 3.

The treatise written by Leon Battista Alberti in 1430-1450 to adapt the issues that were important to his own era became instrumental to the practice of architecture in the latter 15th century. *De re aedificatoria* presented Alberti's idea for an architect to that of an artist and theorist rather than Vitruvius's practical version. Alberti's vision was to detach the architect from the role of the builder, instead introducing him as a scholar and gentleman with engineering expertise and knowledge.⁴⁰ Alberti believed the architect should be distanced from the building trade and focused on scholarly education, study in theory, and the arts.

Arguably, all of the significant works of architecture created during the Italian Renaissance were designed by those trained in sculpture, painting or other art forms. Very few architects that were influential were from the building trade.⁴¹ Alberti's image of the architect as artist began altering the scope of the architect's services during the 17th and 18th century. With more careful attention to the design, and less on the actual building process and construction supervision, a shift in responsibilities had begun.

The engineer, whose roots stemmed from Latin origin, took on a larger role of supervising and design of the technical aspects of the building, thus separating the services of the architect and engineer.⁴² The Renaissance was an era of more building as well as different kinds of building. The need for specialists in a particular building type was the result of the changing need of buildings. Historically the demand comes first which is followed by the skills and organization.⁴³ This division of services has limited the scope of the architect's service and responsibility in contemporary practice.⁴⁴

Alberti's version of the architect as a scholar and theorist had won out over Vitruvius' master designer, engineer, and builder architect. Alberti's architect created lasting impressions on the 17th and 18th century architect. In particular, Alberti can be credited for the elevated status of the architect to an educated profession separated from the builder trade. The means by which

⁴⁰ Ibid., 32.

⁴¹ Blau, La Gory, and Pipkin, *Professionals and Urban Form*, 54.

⁴² Andrew Saint, *Architect and Engineer: A Study in Sibling Rivalry* (New Haven [Conn.]: Yale University Press, 2007), 12.

⁴³ Ibid.

⁴⁴ Hearn, *Ideas That Shaped Buildings*, 35.

an architect was to be trained evolved from builder apprenticeships to that of academic education and pupilage/ apprenticeships in architectural offices.

17th-18th Century Practice

The 17th to the 18th century marked a turning point in the architect's view on their influence in society and their position as a gentleman-scholar archetype.⁴⁵ The 17th century architect influenced by Alberti as being detached from the builder trade began to transition to a closer relationship between architect and builder during the 18th century, which inevitably prevailed during the end of the 19th century and early 20th century modernist movement.⁴⁶

The first academic training began in the late 17th century with educational establishments such as the French Academy of Architecture founded in 1671 and the Royal Academy in England founded in 1768. The Royal Academy founded in addition to the British system of pupilage as a distinct architectural form of training was the first example of professionalism in architecture.⁴⁷

In Britain, there were five primary methods to becoming an architect in the 18th century as defined by Crinson & Lubbock's, *Architecture: Art or Profession? : Three Hundred Years of Architectural Education in Britain*. Entry into the profession could be initiated by being an upper class and educated in an institution, the crafts, through another profession, or by pupilage.⁴⁸ Pupilage eventually became the standard form of entry into the profession during this period, and was made popular by the middle class as a means of entering the profession through a scholarly approach. Architecture offices accepting pupils became a common routine in the mid-18th century. Pupils were indentured to the architect for a set fee in exchange for architectural training.

⁴⁵ Brian Hanson, *Architects and the "Building World" from Chambers to Ruskin: Constructing Authority* (Cambridge, UK: Cambridge University Press, 2003), 227.

⁴⁶ Ibid., 228.

⁴⁷ Crinson and Lubbock, *Architecture*, 8.

⁴⁸ Ibid., 17.

Pupilage in contrast to apprenticeship during the early 18th century accounted for nearly two-thirds of architects that were trained.⁴⁹ Entrance by apprenticeships and other professions diminished to a little more than 10 percent of all architects by 1820.⁵⁰ Apprenticeship was a practice of exchanging labor in an office for training, while pupilage paid for the training they would receive.

The education and training of the pupil varied from office to office. An example of architecture office training by John Soane would entail the following. Training would range from three to seven years, with fees between 50 to 175 guineas, working twelve-hour days six days a week with six week holidays.⁵¹ During the pupil's studies within the office, drawing techniques, learned mechanics, materials, measuring built work for accuracy, copying designs, and working drawings were studied. Outside the office, the pupil attended lectures, worked on sketching and design work, and traveled abroad to learn about classical France, Italy, and Greece.⁵²

During the beginning of the 17th century buildings were designed primarily by men who could build their designs and often did, but by the end of the 17th century men who had no training in the building trade were the designers.⁵³ The social background of the architect, as a result of pupilage, was largely comprised of the middle class during the mid-18th century. The increase of the middle class within the profession elevated the social status for the architect and also prompted the establishment of codes and professional ethics and responsibilities.⁵⁴

According to Lubbock, the 17th and 18th century was a time where the varying ways by which the architect could be trained, "indicates that the practice of architecture was far from attaining the kind of professional cohesion already acquired by the church, law, the army and even

⁴⁹ Ibid., 24.

⁵⁰ Ibid.

⁵¹ Arthur Bolton, *Architectural Education a Century Ago* (London), 12-19, quoted in Crinson and Lubbock, *Architecture*, 25

⁵² Ibid.

⁵³ Ibid., 36.

⁵⁴ Ibid.

medicine.”⁵⁵ Without a professional practice of standards the architect’s responsibilities, role, and title fell into question.

“By the end of the 18th century, practice and theory were united in professional treatises that brought together rules of mathematics, proportion, ordering, geometry, and classical history with empirical studies and improved mechanical and technological understanding.”⁵⁶ The end of the 18th century also marked the beginning of the industrial revolution. Social and economic ways of life would forever be influenced during this period, and impact all parts of daily life, including architecture and the role of the architect.

19th Century Practice

The Industrial Revolution in the late 18th and early 19th century was a period of major change in agriculture, manufacturing, production, and transportation through increased efficiency through machinery. The mass production of textiles through numerous inventions along with the creation of the steam engine and iron founding altered the demand for jobs in these industries.⁵⁷ A change of lifestyle ensued which produced a high demand in private projects to build stores, factories, warehouses, and housing. The architectural practice in response evolved its education and training and developed from a non-standardized occupation to a professional practice of codes, laws, and standardization to protect the profession and to advance its cause.

By the 19th century, Alberti’s vision for an architect as a humanist-artist rather than a builder had seized the profession and the role of the architect.⁵⁸ The separation between builder and artisan was reflected in the curriculum by the schools of architecture. Art and theory became the basis of educational means. Most notably shaping the architectural education of the time, the Ecole des Beaux-Arts in Paris was the premier school for educating architectural students into the 20th century. The Beaux Arts tradition for the architect was an era where design and art

⁵⁵ Ibid., 17.

⁵⁶ Johnson, *The Theory of Architecture*, 34.

⁵⁷ Wikipedia: The Free Encyclopedia, “Industrial Revolution,” Wikipedia, http://en.wikipedia.org/wiki/Industrial_revolution (accessed November 23, 2008).

⁵⁸ Eugène-Emmanuel Viollet-le-Duc, *The Architectural Theory of Viollet-Le-Duc: Readings and Commentary* (Cambridge, Mass: MIT Press, 1990), 119.

reigned absolute, and where the heavier construction and technical design was the sole responsibility of the engineer.⁵⁹ With the responsibility of technical construction shifting to the engineer, the architect became focused in architecture as art, and this was reflected in the projects that were designed during the period. While architects designed buildings and monuments, they were also designing parks, landscapes, and outdoor areas.

An architect and former professor at the Ecole in Paris, Viollet-le-Duc was opposed to the architect as principally an artist. He investigated questions associated with modern era of the 20th century such as the relationship between function and form, structure and ornament, and technology's impact on modernizing and industrializing. Viollet le-Duc believed architecture was more than art, and that the architect shared a responsibility with the technological experience of engineers, whom he thought was producing better architecture through creativity of structure.⁶⁰

Viollet le-Duc's theoretical writings on architecture and his perception of the architect's role were influential to modernism. He believed the architect should be involved with the construction in addition to the design of a building.⁶¹ To be involved and educated with construction, le-Duc in *Historie d'une maison*, explained that the future architect should work in a professional office, and also on a construction site in 'alternation' with academics.⁶²

With an increased dependability between the architect and engineer, le-Duc's model for an architect served as inspiration to subsequent treatises and theories on architecture in the modern era which altered the role of the architect from a humanist –artist to a more practical version.⁶³ The term practical to describe an architect's role is used throughout history. A practical architect is a generalist- combining the design, technical, and building aspects as their responsibilities. Today's professional architect is an evolution of Violle- le-Duc's, Alberti's, and Vitruvius's belief in the architect's role as being practical.

⁵⁹ Johnson, *The Theory of Architecture*, 175.

⁶⁰ Kevin D Murphy, *Memory and Modernity: Viollet-Le-Duc at Vézelay* (University Park, Pa: Pennsylvania State University Press, 2000), 9.

⁶¹ Hearn, *Ideas That Shaped Buildings*, 35.

⁶² *Ibid.*, 33.

⁶³ *Ibid.*, 35.

Influential also to the modernist architect and a contemporary to Viollet-le-Duc, John Ruskin added to the architect's role in society in the 19th century. Ruskin, an art critic, poet, writer, and artist was the influence behind the Arts and Crafts movement that spurred the increased service of the architect from that of primarily buildings and landscapes. Prior to Ruskin, the architect was concerned with building design, but neglected the interior finishes and small details. Ruskin sought the architect's services to include the total facet of the building design from the exterior to the interior elements. In addition, Ruskin like Viollet le Duc called for a closer relationship for the architect to that of the builder. To Ruskin overseeing the construction was as important as the design itself.⁶⁴

Ruskin's philosophies further inspired Hermann Muthesius's *Das englische Haus*, which further influenced the modernist period that began with Walter Gropius and the Bauhaus movement.⁶⁵ Muthesius argued that the architect should design interior details such as the "furniture, rugs, wallpaper, and even dishes and cutlery- in the interest of promoting the design of the total environment."⁶⁶

In addition to the advancement of education and changing scope of the architect's role of artist and scholar to a "practical" version, the 19th century sought to define the role of the architect and thereby introduce architecture as a professional practice that would be upheld by laws and standards. This was in response to the changing dynamic of the architectural profession spurred from the Industrial Revolution. The balance of construction during this period shifted from institutions by the state and land establishments to greater demand from commerce and industry.⁶⁷ The specialization of engineering and design services during the industrial period was inevitable as building technique became more advanced with new materials, new engineering, and new building requirements.⁶⁸ In response to a capitalist environment, the architect defined the role they would play in society to protect its identity, advance its causes as a profession, and to guard itself from encroachment from other professions.

⁶⁴ Ibid., 37.

⁶⁵ Ibid., 36.

⁶⁶ Ibid.

⁶⁷ Ray, *Architecture and Its Ethical Dilemmas*, 50.

⁶⁸ Lewis, *Architect?: A Candid Guide to the Profession*, 149.

Professional organizations such as the American Institute of Architects (1857) and the Royal Institute of British Architects (1834) were established to regulate training through academic institutes and to establish licensing laws that distinguish the architect from other professions.⁶⁹ A professional institution was a standardized voice for the professional practice of architects. Prior to professionalization, individual practitioners and scholars were responsible for shaping the role of the architect. Today, professional organizations such as the AIA and RIBA are still the single most influential voice of the profession for promoting, standardizing, and overseeing and protector of the architectural profession.

Professional organizations that are the so-called protectors of practice are thought by Robert Clarke in Tom Spector's, *The Ethical Architect*, as professional occupational groups asserting itself for its own benefit.⁷⁰ Spector goes on to describe the activities of the organization as,

*Professionalization is seen as little more than a process of self-aggrandizement, whereby a group of would-be professionals organize, set norms of practice, legitimize their knowledge base by making it part of an academic curriculum, devise a means of controlling their restrictive practices, and demand public recognition of their professional status, thereby establishing their turf and protecting it against encroachment by other, would-be professionals.*⁷¹

The AIA was formed initially with the goal to, "promote the scientific and practical perfection of its members" and "elevate the standing of the profession."⁷² By 1858, the constitution was amended to, "to promote the artistic, scientific, and practical profession of its members; to facilitate their intercourse and good fellowship; to elevate the standing of the profession; and to combine the efforts of those engaged in the practice of Architecture, for the general advancement of the Art."⁷³ The goal and organization of the AIA, was to advance its own cause.

⁶⁹ Gutman, *Architectural Practice*, 61.

⁷⁰ Robert W. Clarke, *The Power of the Professional Person* (New York: University Press of America, 1988), quoted in Tom Spector, *The Ethical Architect: The Dilemma of Contemporary Practice* (New York: Princeton Architectural Press, 2001), 11

⁷¹ Ibid.

⁷² The American Institute of Architects, "History of The American Institute of Architects."

⁷³ Ibid.

20th Century Practice

The 20th century is referred to by Crinson and Lubbock as the age in which architects had the major responsibility of building aesthetics and shaping the environment. Architects were at the height of its power as a profession from 1950 to the 1970's.⁷⁴

The most notable of early 20th century architects who advanced the role of the architect were Le Corbusier and Frank Lloyd Wright, pioneers of the modernist movement in Europe and America. The two men were influential in adding to the role of the architect as well as shaping today's architectural influences, the architects' persona, and academic education. The modernist movement in the 20th century represented a change through an "ideology and aesthetic theory," similar to the evolution of the Gothic from the Renaissance.⁷⁵ Corbusier and Wright believed in the significance of the architect as a social scientist- one that would be able to be a difference maker. They believed that design can be a catalyst of social improvement and that good design should be available to all people.⁷⁶ This philosophy of the importance of good architecture has remained strong within the field of architecture.

The modernist movement's pursuit of a better built environment envisioned a new architectural style that freed construction from load-bearing walls and designed continuous space through "dematerialized" glass walls,⁷⁷ Corbusier insisted that architecture was the product of the individual creative intelligence. His theories on architecture were searching for new phenomena stemming from modern industrial production.⁷⁸ New technology in construction and materials influenced the change in the architect's philosophy.⁷⁹ Architecture during the modern era was a revolt on the architecture of the past. The modernist architects abandoned the academy

⁷⁴ Crinson and Lubbock, *Architecture*, 2.

⁷⁵ Blau, La Gory, and Pipkin, *Professionals and Urban Form*, 73.

⁷⁶ Martin Filler, *Makers of Modern Architecture* (New York: New York Review Books, 2007), 20.

⁷⁷ Blau, La Gory, and Pipkin, *Professionals and Urban Form*, 75.

⁷⁸ Alan Colquhoun, *Modernity and the Classical Tradition: Architectural Essays, 1980-1987* (Cambridge, Mass: MIT Press, 1989), 89.

⁷⁹ Blau, La Gory, and Pipkin, *Professionals and Urban Form*, 73.

education and the historical architecture precedents, instead revolutionizing architecture for the “masses” through industrial mass production.⁸⁰

In the mid 20th century, successful Los Angeles architects, “Richard Neutra, R.M Schindler and Charles and Ray Eames did much of their most distinctive work with single-family homes.”⁸¹ They made their names through residential design. The “New York Five (which includes Peter Eisenman, Michael Graves, Charles Gwathmey, John Hejduk and Richard Meier), a group of architects who exhibited together in 1969, shared some Corbusian principles and did some of their own construction to get work built.”⁸² Peter Eisenman was the Le Corbusier of the late century with regards to originating new theories on architecture.⁸³ Peter Eisenman led the charge for theories in the latter 20th century among the many practicing architects and scholars.⁸⁴ Theory in the 20th century has a changing demand of a, “changing world, to the global economy, ecological crisis, and cultural confusions.”⁸⁵

Another breed of architect came about with John Portman. Portman is an American architect/developer who pioneered an alternative role of the architect. Portman is an architect, developer, and businessman balancing real estate development with architecture successfully as a way to provide work for his architecture firm by hiring himself in the process to design the building.⁸⁶ Portman’s business strategy is a complete package from architecture, engineering, a real estate development firm, and management companies for properties he owns from merchandise to restaurants.⁸⁷ Portman looks to be in total control of his work and ultimately contribute to the built environment in positive developments from both a developing and architecture standpoint. Portman’s business philosophy is an interesting case study as he is arguably the most notable architect who became famous in addition to becoming wealthy by

⁸⁰ Ibid.

⁸¹ Scott Timberg, “Retooling Form and Function,” Los Angeles Times, <http://www.calendarlive.com/galleriesandmuseums/cl-ca-fabrication19mar19,0,4782237.story> (accessed March 18, 2009).

⁸² Ibid.

⁸³ Charles Jencks and Karl Kropf, eds., *Theories and Manifestos of Contemporary Architecture* (West Sussex: Academy Editions, 1997), 8.

⁸⁴ Ibid.

⁸⁵ Ibid.

⁸⁶ Roberta Wolf, *How to Become a Developer* (Novato, Calif.: Crittenden Books, 1984), 4.

⁸⁷ Ibid., 15.

developing property and holding on and managing the properties he develops. Portman's philosophy for the architect to be able to be a part of the early decision making process regarding development contends that the following areas need to be addressed.

1. *The Structural organization of the city and its existing growth pattern*
2. *The real estate market and the effect of design and cost on marketability*
3. *The preparation of studies that measure feasibility: economic, political, and social*
4. *Projections of total development cost, of which building cost is a substantial percentage but by no means the whole story*
5. *Projection of income and expenses over a long period of time, usually called the "financial pro forma"*
6. *The financial market and the ways to put together the financing of a building*
7. *The renting and operation of the completed building*⁸⁸

Portman's thoughts on what the architect needs to focus on are finance, marketability, real estate trends, operations, and income projections. He believes that an integrated design-development process will be necessary to solve urban and environmental problems.⁸⁹

Portman's work has been controversial over his career. From the American Institute of Architect's viewpoint in the past, combining project financial operations with design is perhaps an unethical issue as architects should be involved in the financial aspects of the project in order to manage the client's best interest.⁹⁰ This view has since changed, as architects are now allowed to serve any number of positions with respect to development of a project.

During the end of the 20th century, variations on the architect's role were broader than it had ever been in the architect's history. The influences by modernist architects in the beginning of the 20th century until the turn of the 21st century influenced the persona, education, design theories, building techniques, and the practice of architecture. Architects of the 20th century office were draughts people, schematic designers, construction managers, technical designers,

⁸⁸ Portman, *The Architect as Developer*, 4.

⁸⁹ *Ibid.*, 6.

⁹⁰ Paolo Riani, *John Portman* (Washington, D.C: American Institute of Architects Press, 1990), 12.

project managers, business leaders, design-builders, developers, and so forth. Each had varying levels of influence on the projects they built.

Since the 17th century, the architect has been labeled as four different types; the academic architect, the craftsmen-builder, the technological-architect, and the social scientist.⁹¹ Paul-Alan Johnson refers to the role of the architect as having suffered, “more than their fair share of identity crises.”⁹² Shaped by different viewpoints by scholars and theologians in its early translations; and by educational establishments, notable architects, and professional institutions during the 19th and 20th century; the architect’s role has continually evolved in society.

21st Century Practice

The 21st century architect has experienced a shift in the changing dynamics of practice. Architectural firms are becoming larger because of the demand for a multiplicity of services by the client and the result of a booming building economy that has continued till the economic recession of 2008. Large architectural firms around the globe are specializing in more than architectural design. Services such as master planning, urban design, interior design, graphic design, and branding are becoming common practice in architecture offices.

In the 60’s, 70’s, and 80’s American architecture student’s were enticed to work for the “starchitects” of their era; Philip Johnson, I.M. Pei, Louis Khan. In the latter 20th century and early 21st century in the United States, the young architects are attracted to signature corporate firms like SOM, KPF, and Gensler.⁹³

Architects of the 21st century are delivering complex projects at a quicker pace than they were at the turn of the 20th century. Technology has played a huge role in influencing the building industry. The advanced technology of structural components and computer software offer the architect numerous possibilities to design and assemble a building’s structure. With the

⁹¹ Donald D. Egbert, *The Beaux-Arts Tradition in French Architecture*, Limited Ed. (New Jersey: Princeton Univ Pr, 1980), 3.

⁹² Johnson, *The Theory of Architecture*, 175.

⁹³ Bill Chang, 2006.

advancement in technology and building engineering, the collaboration of engineers, architects, and contractors throughout the delivery process has increased.

The technological component of architecture and the advancement of computer software have changed the way architects operate, design, communicate, and do business on a daily basis. A major change within the past decade, due to the capabilities of the internet and other technologies is the evolution of global practice. Architects are now able to deliver a project anywhere in the world, and communicate with a client and construction team without physically being at the building site. Communication between architect-contractor-and owner has taken new forms of collaboration.

The pace by which architects are delivering a project demands information through efficiency at an even greater request than in the past. Clients are becoming more sophisticated and knowledgeable on building practice, and their requirements for excellence and quality have increased, while their bottom line on price has remained the same.

Synopsis

Architecture in its earliest form was designed and built by its inhabitants. As architecture and the technical attributes of building became more complex, a demand was needed for expertise in building design. The occupation of the architect emerged from the craftsmen and builders of ancient civilizations. Architecture constructed throughout the Roman period of classical antiquity created a new role for the architect as the “interpreter of individual needs.”⁹⁴

Influential to the 15th century, but manifested during classical antiquity, Vitruvius’ treatise, *The Ten Books on Architecture* was the first text that sought to clarify the role, responsibility, and education of the architect. Vitruvius’ writings on architecture set the basis for a professional practice.

⁹⁴ Blau, La Gory, and Pipkin, *Professionals and Urban Form*, 52.

The Renaissance period of the 15th and 16th century elevated the social status of the architect. The detachment from the “low” social standing of the builder and the infusion of other artistic and scholarly backgrounds gave the architect value. Alberti, a humanist scholar and architect, advanced the role of the architect through his interpretations of Vitruvius’ treatise. Alberti sought education and training of the architect through scholarly education, study in theory, and the arts. The Renaissance period redefined the role of the architect from a social and ideological turning point.⁹⁵

Patrons of the Middle Ages and the Renaissance architects only had to know, “what was technically possible.” The laborers and builders during the 15th and 16th century were the most technically sound, which has not been replicated since.⁹⁶

France began the first official state-organized academic education for aspiring architects through the Royal Academy of Architecture in the 17th century.⁹⁷ British education of the architect followed slowly thereafter in 1768 with the Royal Academy, but with less architectural influence than its predecessor.⁹⁸ The academic institutions were reserved for few privileged upper class students. Master builders, painters, scientist, landowners, and pupils of architects found their way into the profession.⁹⁹ Alternative options for entering the architectural profession continued as the normalized means of becoming an architect during the 17th century.

Pupilage, as indentured training in an architectural office, became a significant means of education for aspiring architects in the 18th and 19th century. In addition, pupilage supplemented university education.¹⁰⁰ By today’s standard, the similar practice of internship in an office after or during education is common.

The architect’s responsibility of overseeing the building and construction process shifted to the architect’s aesthetic responsibility during the 17th -18th century. This period was a slow

⁹⁵ Ibid., 59.

⁹⁶ Ibid., 54.

⁹⁷ Ibid., 56.

⁹⁸ Crinson and Lubbock, *Architecture*, 9.

⁹⁹ Ibid., 3.

¹⁰⁰ Ibid., 45.

progression for architecture due to the primary concern of decorative elements. However, during the 19th and 20th century architects eventually challenged the ornate visions of the 17th and 18th century.

The industrial revolution of the late 18th and the early 19th century created a lasting effect on the socioeconomic and cultural conditions of Europe and North America.¹⁰¹ The change in lifestyle from a self sustaining society into a capitalist culture increased the demand for buildings from private businesses and clients. Architectural practice and the construction industry made changes to their process to complement each other as construction became more complex and technical. Specialization of advanced systems in the building process created subcontractors which redefined the role of the general contractor who began to use less of their own labor to build projects.¹⁰²

The architect's separation and division of labor was a result of the complexity of projects and the architect's specialization of services. Today, there are consultants and specialists in nearly every conceivable position to deal with a particular focus in the building design. The consequence is that the architect's responsibility and power over the projects result has been limited.

Education in academic colleges provided the standard training for the majority of architects in the late 19th and early 20th century. A movement toward examination and registration in the mid- 19th century in Britain and America encouraged a standard method of education.¹⁰³ In addition to educational standards, advocates of the architectural profession wanted to establish professional standards to protect the public.¹⁰⁴

Before the AIA established the professional practice of architecture, there was no standard practice or governing body upholding the practice of architecture. Prior to professional practice anyone could claim the role of architect. Professionalization standardized the education,

¹⁰¹ Wikipedia: The Free Encyclopedia, "Industrial Revolution."

¹⁰² Lewis, *Architect?: A Candid Guide to the Profession*, 149.

¹⁰³ Crinson and Lubbock, *Architecture*, 56.

¹⁰⁴ Ibid.

training, roles, and responsibilities of the profession to protect its self interest. The AIA and its joint partners such as NCARB and NAAB continue to establish guidelines and procedures to safeguard the profession and the public.

The current state of the architect can be described as a weak profession because of the multitude of factors involved in the building process. However, leaders of the profession are optimistic about the architectural profession. James P. Cramer, a former chief executive of the AIA in Washington D.C. and author of books and articles on the profession views the profession at a significant crossroad in history and believes the architect is in the best position to, “transform the unusual, the extraordinary, the miraculous into standard practice... working with planners, other design professionals, public officials, and, most important, the public.”¹⁰⁵ Cramer sees 21st century architectural practice as, “challenged to set the stage for what could, in the hindsight of future historians, be one of the most radical leaps forward of our civilization.”¹⁰⁶

Like Cramer I believe that the future success of the profession and the success of the built environment will continue to be in the hands of a multitude of individuals. However, I also believe that practice, the foundation of the architect’s decision making, needs to be reformatted to foster a better built environment.

¹⁰⁵ James P Cramer, *Design Plus Enterprise: Seeking a New Reality in Architecture* (Washington, D.C: American Institute of Architects Press, 1994), 20.

¹⁰⁶ Ibid.

III. Better Projects Defined

Creating better projects means building successful projects of quality that bring value to everyone involved with the project, especially the project's end user. To achieve better projects the architects must first understand what a successful project is to each party involved in the project: the client, the contractor, the end user, and the architect. The design and construction quality of the project must also be enhanced through the process of rethinking architectural practice.

A Successful Project

The *organizational client* generally defines success by how well their project financially profits from their investment. The buildings they produce are judged by maintenance costs, resale value, usability, and organizational efficiency issues.¹⁰⁷ These clients manage their project like any other business venture- around profitability. The *owner-user client* generally defines success by the quality of building they receive from their investment, and if the building meets their requirements set forth during design and construction. The end user views the qualities of a successful project as meeting their needs and expectations, and the value they receive for their investment. The contractor generally views success by meeting the project's schedule and budget, having a product free of defects, and creating a project accepted by the public.

The architect has multiple viewpoints on what can be defined as a successful project. The architect may view the success of a project by the determinants defined by other parties involved in the project's process- the contractor and client's perception of success. As architecture is a service oriented profession, the ideals of those that the architect works for or with-often gauges the success of the project. The architect may also view a successful project as being well designed and built to satisfy the needs of the end user. Other architects may be financially focused, and regard the success of a project through the profit they pocket. Client satisfaction was by and large the definition of a successful project for the architects I surveyed.

¹⁰⁷ Gutman, *Architectural Practice*, 50

Derek Sharp, the author of *The Business of Architectural Practice*, believes that delivering a quality designed building for the end user, providing excellent service, and optimum benefits and profitability for the client and architect should be the combined objective of architectural practice.¹⁰⁸ The architect should accomplish all three goals as the benchmark for success.

Sir Henry Wotton's *Elements of Architecture* in 1624, described architecture as a process of select activities that are specialized and yet connected.¹⁰⁹ Blau notes how Wotton believed in the end that architecture is, simply, "to build well."¹¹⁰

Design Quality

To define building excellence and what constitutes good design quality, the historical definitions by Alberti, Vitruvius, and today's contemporary definition by architects, industry members, consumers, and the architectural critic are explored.

Vitruvius initiated judging the quality of a building.¹¹¹ He looked at the structural integrity of the building and how well the building served its purpose, but also judged a project's visual quality. In Latin, Vitruvius labeled architecture as *firmita*, *utilitas*, and *venustas*. The translation of these terms has furthered been interpreted into different meanings. Henry Wotton translated the terms as "firmness", "commodity" and "delight." Therefore, to Vitruvius, a project's quality was a culmination of functionality, build quality, and impact.¹¹²

Alberti's take on building excellence was reflected in his belief that buildings should be able to positively influence those that inhabit them and be able to promote good health.¹¹³ The major quality of good buildings was defined by Alberti as "*concinnitas*: the possession of such harmonious and mutually complimentary parts that nothing could be added to or removed from

¹⁰⁸ Derek Sharp, *The Business of Architectural Practice* (London: Collins, 1986), 2.

¹⁰⁹ Blau, *Architects and Firms*, 10.

¹¹⁰ Ibid.

¹¹¹ Hearn, *Ideas That Shaped Buildings*, 39.

¹¹² Wikipedia: The Free Encyclopedia, "Design Quality Indicator," Wikipedia, http://en.wikipedia.org/wiki/Design_Quality_Indicator (accessed April 30, 2009).

¹¹³ Anthony Grafton, *Leon Battista Alberti: Master Builder of the Italian Renaissance*, 1st ed. (New York: Hill and Wang, 2000), 287.

it without spoiling the whole.”¹¹⁴ In addition, Alberti believed that beauty was in the eye of the beholder.¹¹⁵

Dana Cuff, the author of *Architecture: The Story of Practice*, defines design quality as a,” phenomenological entity perceived by individuals, not as an inherent quality of the object or building.”¹¹⁶ Her view rests in the judgment of the evaluators who makes the decisions of quality; consumers or public at large, the participants in the design process, and the architectural profession.¹¹⁷ Cuff views an excellent building to be perceived as excellent by all three.

Judging overall design quality by multiple members as in the case of Cuff’s theory of excellent quality can be a difficult if not impossible task. However, the British have devised, based off Vitruvius’ principles, an innovative system that judges a project’s design quality through software that can be accessed online. The intention of the software termed, Design Quality Indicators (DQI), was created by the Construction Industry Council to be able to judge the quality of design to improve the quality of the built environment. The process begins by logging information about the project four times during the projects duration. The assessment is given at the briefing or early conceptual phase, the mid-design assessment, the ready for occupation assessment, and the in-use statement.¹¹⁸ As stated on the DQI website, “(DQI) is a pioneering process for evaluating design quality of buildings; it can be used by everyone involved in the development process to contribute to improving the quality of our built environment.”¹¹⁹ In the United States, New York’s Department of Land and Construction has implemented DQI in the procurement of city buildings.¹²⁰

Good design quality is made up of a number of factors dating back to classical history. Design quality is classified by Vitruvius as firmness, commodity, and delight. Alberti’s interpretation of

¹¹⁴ Ibid.

¹¹⁵ Ibid., 288.

¹¹⁶ Cuff, *Architecture*, 196.

¹¹⁷ Ibid.

¹¹⁸ Design Quality Indicator, “The catalyst for providing better buildings,” <http://dqi.org.uk/DQI/default.htm> (accessed November 14, 2008).

¹¹⁹ Ibid.

¹²⁰ Wikipedia: The Free Encyclopedia, “Design Quality Indicator .”

design quality - reshaping inhabitants of a building – focuses on the requirements of the end user. Dana Cuff believes design quality will vary depending on individual opinions. The combined acceptance by the consumers or public at large, the participants in the design process, and the architectural profession can classify good design quality. My basis for “better projects,” is a combination of Cuff’s, Alberti’s, and Vitruvius’ definition on design quality. Quality design responds to the needs of the end user and public, satisfies the profession, is soundly built, has aesthetic impact, and functions well.

IV. Influences on Architectural Practice

Robert Gutman's, *Architectural Practice: A Critical View*, is one of the most recognized and cited books on the practice of architecture. Gutman confronts the challenges in practice in 1988 and lists his ten major conditions for architectural practice. The extent of Gutman's analysis twenty years later is similar in its concerns to the influences that I have outlined.

Challenges to Architecture

Robert Gutman in 1988 cites these challenges as undergoing significant transformations

1. The extent of the demand for services
2. The structure of demand
3. The oversupply or potential oversupply of entrants into the profession
4. The new skills required as consequence of the increased complexity and scale of building types
5. The consolidation and professionalization of the construction industry
6. The greater rationality and sophistication of client organizations
7. The heightened intensity of competition between architects and other professions
8. Increased competition within the profession
9. The difficulties of achieving profitability and obtaining sufficient personal income
10. Greater intervention and involvement on the part of the state and the wider public in architectural concerns.

Source: Challenges to Architecture from Gutman, *Architectural Practice*, 97.

Architectural practice is being shaped by a multitude of influences. Internal influences such as architectural education, professional organizations, and the design delivery process affect how a firm runs its practice. On the same note, the external influence of clients, consumers, and other industry members also impact the way architects practice. These internal and external influences ultimately affect the final design and construction quality of a project. This chapter identifies five major influences that are shaping the way architecture firms practice: *the client and consumer, industry members, professional organizations, architectural education, and the design delivery process*. The challenges of each influence provide a basis for understanding why rethinking architecture practice can result in better project quality leading to a heightened value for the profession.

Client and Consumer

Michael Latham, an architectural critic views the first decade of the 21st century as the age of the client. With clients being more sophisticated and educated on the process of building, Latham sees a new culture in the industry for the large and medium size projects. Latham describes the evolution as a process of teamwork and better value, and sees the client searching out his building team like they would a new car or home; finding what suits them best.¹²¹ Taking the opposing standpoint of many architects, Latham sees the client as the central figure of the construction process, not the architect.¹²² Regardless if the client or architect is the central figure of the construction process, the client and the consumer is the single most influential component of a project. Budget, design quality, build quality, services, and schedule are a reflection of the client's goals for the project.

There are two types of clients- the private client and public client. Private clients consist of owner-user clients and developer clients. Owner-user clients build projects for themselves to use and are either individuals wanting to build a home, corporations looking for a new office building, factory, store, or institutional clients looking to build a private school, university, hospital, or church. Owner-user clients provide a direct designer-user relationship that allows the client/end user to directly communicate their requirements to the designer and vice versa. In contrast, developer clients build for others, eliminating the direct communication between designer and end user. Developer clients are individuals or companies who primarily invest in residential and commercial projects. After completion of the project, the developer client will rent or sell their project to the end user.¹²³

A public client consists of government bodies at the federal, state, and local levels.¹²⁴ Public clients commission large scale projects such as infrastructure -roads, water, sewage systems, and transport. These types of projects are designed primarily by civil engineers. The public client also develops offices, schools, post offices, sports facilities, housing, military buildings, and

¹²¹ Ray, *Architecture and Its Ethical Dilemmas*, 47.

¹²² Ibid., 42.

¹²³ Paul Segal, *Professional Practice: A Guide to Turning Designs into Buildings*, 1st ed. (New York: W.W. Norton, 2006), 19.

¹²⁴ Ibid.

transit stations which are mainly designed by architects. These projects account for a large portion of construction in America.¹²⁵

Although there are different types of clients, it is the architect's responsibility to provide the client with value both in terms of service and the end product. At the AIA Summit on Expanding Architectural Services hosted in 1995, the AIA took note on what clients believe architects should improve on. The clients stated that they want architects to offer a broad range of services, develop long term architect - client relationships, consider the facility life cycle, and emphasize the role of facilitator and integrator.¹²⁶ In addition, the AIA Handbook of Professional Practice, mentions the "Five Ps;" *promotion, product, people, place, and price* as the major factors that influence a client's selection of a product or service.¹²⁷ With an architectural project, the client is most interested in the best value, which is the best product and the best service at the best price. The product, being the final design or built project and the service, being the design delivery process, are what architects should be able to deliver to the client. Architectural practice is in a constant state of trying to meet the requests of the client. However, the client's role as the major decision maker can hinder the project quality, ultimately deterring the value of the product.

Client/Consumer Challenges

Andrew Pressman states that architects strive to be mavericks, but instead are limited by scope, budget, and client's vision.¹²⁸ Each client type makes decisions that affect the final quality of the project. "Sophisticated" clients that have been developing buildings for years need to make decisions on construction and design based on cost just as a first time home owner would. Architects can guide a client's decisions, but often lack expertise in construction and cost. On the other hand, the contractor, knowledgeable about construction and cost, often does not hold design expertise. Therefore, the decisions made for the final product are often guided by a

¹²⁵ Ibid., 21.

¹²⁶ The American Institute of Architects, *The Architect's Handbook of Professional Practice, Student Edition*, 13th ed. (New York: Wiley, 2001), xxxviii.

¹²⁷ Ibid., 7.

¹²⁸ Andrew Pressman, "Creating a firm culture that supports innovative design," *Architectural Record*, <http://archrecord.construction.com/practice/firmCulture/0802firm-1.asp> (accessed February 18, 2009).

combination of experts. Often times, the client is largely influenced by cost rather than the combination of construction, design, and cost.

The major challenge for the architect is being able to guide the decisions of the client, assisting them in making proper choices based on cost, design, and construction. However, the architect/designer of the 21st century is typically not well versed in cost and construction. Architects need to somehow offer this three-part expertise in order to provide value to the client and to guide them in the direction of creating projects of greater quality.

Industry Members

For the architectural profession, ongoing competition for market share and service is a result of overlapping expertise by other professionals; “the engineers, interior designers, surveyors, construction workers and managers, material experts, and real estate economists.”¹²⁹ Because architects are able to cross over into other construction related occupations, the architectural profession can start to lose talented individuals. However, having an architect trained in design as part of a construction team can actually increase the potential for better projects.

While it is ideal to have architects and contractors on the same team, the reality is that contractors and engineers are the competition. In essence, we compete for the same projects and provide similar services. Unfortunately, the value of a contractor’s service will ultimately relinquish the leadership role of the architect and decrease the value of design, the architect’s primary asset.

Engineers, architects, interior designers, and contractors compete for design commissions that in the past were the responsibility and ownership of the architect. This increased pressure from other industries would seemingly create the highest design excellence and service for the client and consumer. However, good design can be considered a luxury rather than a necessity to some clients and has led these clients to value the services of engineers and contractors.

¹²⁹ Gutman, *Architectural Practice*, 101.

Engineers and contractors are able to provide value for the client through the design-build and construction management delivery method. In order to compete with other industry members, and increase their demand for services, architects have altered practice to be more specialized by focusing on becoming experts in a particular building type or sector. In addition, architecture firms produce design documents in shorter amounts of time to be more efficient. Architectural practice has also expanded its services offered to the client by including additional services such as masterplanning and branding. Despite these changes, architects have not been able to recapture their role as a leader of the design and delivery process, nor have they been able to set themselves apart, in terms of value, from the contractor or engineer.

One may even argue that faster design documentation, specialization, and expanded services don't encourage better projects. Quicker production can translate to less time on the design table, specialization can lead to less control over the entire design process, and taking on more services can mean that not every sector will be given 100% attention.

Industry Members Challenges

In terms of how industry members have influenced architectural practice, the major challenge remains to be how architects will compete with the value that contractors and engineers provide to the client. In order for architects to be highly valued by the clients that commission their services, valued by the consumers who use and purchase the buildings they design, and valued by the building industry, they need to provide a service that is unique and specific to architectural practice.

Professionalization

Professional organizations are bodies responsible for promoting and maintaining the value of architecture. They do so by establishing standards within practice and encouraging a code of ethics. The ethical obligation of the architect as defined by the AIA is to jointly fulfill their duty of protecting the public's health, safety, and welfare, while solving the complexities of a project in the best interest of the client's goals and demands. However, architects' ethical responsibilities have gone further than the standardized statement published by the AIA. Ethical

responsibility for some extends beyond protection of the public and guarding the client's best interest. The architect may hold higher ideals of the value of architectural design and quality. These ideals then get translated as firms and architects select their clientele.

The initial decision for most architects is to accept a commission regardless of the impact on communities, economies, resources, and energy demands.¹³⁰ For the smaller architecture firm, declining a commission because they believe it may be ethically wrong could ultimately lead to an inability to pay the bills or more consequential- bankruptcy and closure of the firm. Not accepting a commission based on what is ethically wrong can also endanger the long term relationship between architect and client. In addition, being selective of clientele based on ethical issues can result in projects of lesser quality as the next designer may not have high standards for project quality.

Ethics or the lack there of, is perhaps influencing architecture and the quality of projects that are being created. There are many negative ramifications for architects when choosing not to pursue a project they believe is ethically wrong. As a result, architects are a primary contributor to the numerous poorly designed projects that ultimately affects a society's way of life and the experience of towns and cities.

The decisions that architects make ultimately influence the architecture being built. An architect with an eight year old practice that I had interviewed was faced with such a dilemma of accepting a commission against the firm's beliefs. During the phases of planning and programming, for a repeat client, the firm did not believe that the project's use was appropriate for the location. However, the client and expert consultant believed otherwise, and the firm continued design as planned. The eventual outcome of the project from a financial standpoint was not successful thus far, but the project won a design award for the firm.¹³¹

¹³⁰ Irena Bauman, "Should I care for the high street?," BD: the Architects' website, <http://www.bdonline.co.uk/story.asp?sectioncode=452&storycode=3128046&c=1> (accessed February 13, 2009).

¹³¹ Grant Sumile, interview by author, November 6, 2008.

Sjoerd Soeters believes that architects should not work for people they do not respect.¹³² If the values and goals of the client do not coincide with the architect's goals they should not accept the commission. Clayton Nishikawa, an architect led design-builder believes in the same philosophy. Nishikawa seeks clients that share and respect his vision for quality designs and projects. He doesn't believe in working with clients that aren't seeking quality designed projects, or clients that micro manage every detail.¹³³

In addition to encouraging ethics, organizations such as the AIA seek to promote the value of design. However, the professional entities supporting architecture in the U.S. have not been effective in doing so. Other professional industries, such as law and medicine have been able to create a set of standards and protect their business, while effectively promoting the value of the profession.

Medicine has made large advancements in both saving people's lives and increasing health and life expectancy in the past 100 years. The practice of law has the power to create legislation to protect the public's health and safety and to protect the interests of the party they represent creating a greater demand for their specialized expertise. Both professions hold a significant position in their fields, are rewarded for the value of their services, and protect their industry through professional associations and legislation. The professional practice of architecture does not have the same demand for their expertise; subsequently architects make less money, but also hold less influence and control in the building process. Less influence and control by the architect in the building process does not encourage project quality.

Professional organizations such as the AIA and RIBA, have since their inception, sought to promote the value of "good design" and the value of what an architect can bring to a project. The AIA's trademark is, "Good design makes a difference."¹³⁴ Despite these efforts, legislation and the government in the United States have not promoted "good design" effectively in order

¹³² Ray, *Architecture and Its Ethical Dilemmas*, 72.

¹³³ Clayton Nishikawa, interview by author, November 12, 2008.

¹³⁴ The American Institute of Architects, "How Design Works for You," AIA, <http://howdesignworks.aia.org/> (accessed February 7, 2009).

that all projects demand the highest design expectations. The AIA and RIBA have made modest gains in promoting good design and better environments.

Professionalization Challenges

In terms of ethics, if more architects could stand up to clients and dismiss unethical job opportunities, could the quality of projects within the built environment increase as clients become accustomed to architect's standards for design quality? However, it is not realistic to rely on all architects to turn down projects that don't align with the firm's standards. While the AIA encourages making ethical decisions, another entity or system needs to be included within practice that assists architects and firms in the client selection process.

Secondly, professionalization needs to provide alternative means of encouraging "good design" as the value of "good design" will most likely result in projects of greater quality. A major challenge for professional organizations is that professional responsibility will have a limited impact on anyone outside of the profession. As professional organizations are formed in the best interest of the profession they represent, their influence is marked with skepticism and apprehension.

Nevertheless, more support for quality designed developments should become part of the planning and approval process. A public impartial body or organization formed to assist government, architects, clients, and developers to develop projects of good design and substance is needed in the United States. An existing example is CABE (The Commission for Architecture and the Built Environment). CABE is Britain's government advisor on architecture and urban planning and is an impartial public agency that works with architects, planners, designers, developers and clients to create better projects of value. Their mission is not to promote architects, engineers, or contractors, but to promote better design, better environments, and better places for the public.

CABE's work includes: "helping public agencies with good design; supporting public agencies in boosting their in-house design expertise; promoting better education, skills, and careers for the built environment; conducting research and running campaigns on architecture, design, and

public spaces.” As an impartial organization, they do not recommend architects or contractors, don’t offer advice to individuals on their own project, or make statutorily binding decisions.¹³⁵ The goal for everyone involved in the design and building process should be to build projects of quality. In order to do so, everyone involved in the process needs to be aware of the value of design. Therefore, a public non biased organization such as CABA can actively promote the value of design that can lead to better environments for the end user and public at large.

Design and Delivery Process

The design and delivery process has altered its course considerably since the 1980’s. In 1978, the AIA adjusted the code of ethics to allow architects to become design-builders in response to its members. The change in practice responded to engineers and contractors who expanded their scope to delivering design services.¹³⁶ In addition, projects became more complex from a managerial and technical perspective. Architects were either unwilling to advise the owner on more complex projects because of additional risk or didn’t have the appropriate experience and knowledge.¹³⁷ At the same time, methods such as, “project management, design-build, construction management, adjudication, best practice and... partnering,” were barely understood in the 1980’s.¹³⁸

The length by which the architect delivers a project from design to the finished product depends on the firm’s ability and desire to service the needs of their client. Don Clifford, an architect with a nontraditional practice, estimated the lifespan of a project from idea to completion to be roughly 4 years.¹³⁹ Of the four years, the traditional architect’s service of designing through bid package is a year- a quarter of the project duration. To build better project, should an architect be in control of the project only a quarter of the process or for the entire duration?

¹³⁵ CABA, “What we do,” <http://www.cabe.org.uk/default.aspx?contentitemid=160> (accessed February 15, 2009).

¹³⁶ Gutman, *Architectural Practice*, 46.

¹³⁷ The American Institute of Architects, *The Architect's Handbook of Professional Practice*, Student Edition, 170.

¹³⁸ Thomas, *Design-Build*, 8.

¹³⁹ Don Clifford, interview by author, November 10, 2008.

Building a quality designed project should be the goal of all parties involved in the design and construction of a project. Architecture should be more than just a means for economic benefits- it should be a means for bettering our surroundings and society. How does the process by which architects design and deliver promote or hurt the built environment? Paul Segal, an architect and professor of professional practice identifies the four variables that are the same in every project: scope of work, schedule, money, and risk.¹⁴⁰ For every project these four variables need to be assessed to gauge what is the best delivery method for the client.

- Scope of work, the quantity and quality
- Schedule- the time it will take to do each portion of the project
- Money- the cost of each component of the project including professional fees, the cost of construction, and the cost of borrowing (related to time)
- Risk- how certain it is that the other factors will turn out as expected and desired ¹⁴¹

This section will look at the different approaches to the delivery process: the “traditional” design-bid-build method, construction management, and the design-build method. Each method incorporates Segal’s variables to illustrate the challenges affecting practice that ultimately impacts building better projects.

“Traditional” Design-Bid-Build Architect

The “traditional” method now referred to as the design-bid-build method, was the standard means of project delivery until the 1970’s.¹⁴² A project was delivered through separate contracts and responsibilities by the architect, contractor, and owner. The design-bid-build method starts with the owner commissioning the architect to design and prepare construction documentation (the “design”). The documents are then solicited to the construction industry for a competitive bid (the “bid”). The contractor that is selected who is the lowest qualified

¹⁴⁰ Segal, *Professional Practice*, 42.

¹⁴¹ Ibid.

¹⁴² The American Institute of Architects, *The Architect's Handbook of Professional Practice*, Student Edition, 169.

bidder then builds the project from the documentation- plans and specifications of the architect (the “build”).¹⁴³

The two typical contract types of the traditional method are the architect/ owner agreement- for the architect to provide professional service, and the owner/contractor agreement for construction services, labor, and materials to build the project.¹⁴⁴ The owner can further contract the entire project to a single contractor, called a sole prime general contract, or a more experienced owner in the case of a developer or government body could have separate contracts with multiple contractors called a multiple prime contract.¹⁴⁵ The advantage for the owner of multiple prime contracts is it limits the overhead of a single party outsourcing to multiple sources which will reduce the price of the overall construction cost. Essentially, the process minimizes the profit of the general contractor by increasing the owner’s responsibility and risk.

The traditional method of delivery can also vary by the fee structure that is determined. The project can be developed under a standard, negotiated select team, or a cost plus fixed fee approach.¹⁴⁶

The benefits of the design-bid-build method from a risk perspective are limited for both the architect and contractor, with the majority of financial responsibility and risk on the owner.¹⁴⁷ The architect is paid the negotiated rate for their professional services, and the contractor is paid for their services of constructing the building. The risk of delays, change in price because of economic conditions, design alterations, etc. are by and large part of the risk taken on by the owner in the design-bid-build method.

With the owner holding all the money and risk they also hold all the decision making power. It can be argued that a single source of responsibility is never as good as multiple decision makers.

¹⁴³ Segal, *Professional Practice*, 41.

¹⁴⁴ Ibid.

¹⁴⁵ Ibid., 42.

¹⁴⁶ The American Institute of Architects, *The Architect's Handbook of Professional Practice*, Student Edition, 172.

¹⁴⁷ Thomas, *Design-Build*, 28.

The quote, “two heads are better than one,” can equally be applied to the design of the built environment.

Construction Management

The construction management approach is an alternative method of project delivery from that of the design-bid-build procedure. The three parties of owner, contractor, and architect are still included, but their roles and responsibilities as well as risk have shifted. The construction manager (CM) can be an advisor, an agent, or a constructor of the project. The CM is bound by contract to the owner/client, but usually holds no contractual responsibility with architect or contractors.

The owner hires a CM to advise on budgeting, schedule, and construction. The CM acts as the owner’s representative with the design and delivery team (the architect and contractor).¹⁴⁸ In the case of a CM-constructor, the project normally has a guaranteed maximum price (GMP) as the project is designed from the beginning at a set price determined by the CM-constructor.¹⁴⁹ The advantage for the CM method is the opportunity to “fast-track” where construction can begin before the final construction documentation is completed. Lessening the duration of the project and outstanding payments to financial institutions can essentially save money on overhead costs for the owner.

The CM introduces another role within the project’s process. For the architect, the CM relinquishes the architect’s role as the leader of the project process. Having a CM means that the architect’s primary responsibility is the designer of the project. With limited responsibility the architectural fees are lowered, and the project’s quality is arguably compromised. Quicker projects at a lower cost doesn’t necessarily equate to a better project.

¹⁴⁸ Segal, *Professional Practice*, 44

¹⁴⁹ The American Institute of Architects, *The Architect's Handbook of Professional Practice*, Student Edition, 173.

Design-Build Delivery Method

Design-build as a delivery method in the United States in 2001 accounted for 40% of the project delivery market for the private sector with an estimated growth by 2010 to be 50%.¹⁵⁰ France utilizes the development process for 50% of their projects, with the contractor completing the design of the project post bidding. Seventy percent of the projects in Japan employ the design-build method in a bridge-design-build. Australia's design-build projects account for 40% and 30% of public works projects.¹⁵¹ The popularity of design-build on a global scale as well in the United States is becoming a widely used delivery method because it "saves time and money," and reduces conflicts between parties.¹⁵²

Architects compare design-build to the "master builder" who oversaw both the design and construction of the project. The only difference according to ZweigWhite's 2005 survey, is that the majority of design-build 55% is lead by contractors, 26% integrated, 11% designers- mostly engineers, 5% joint venture, and 4% of design build is developer led.¹⁵³ Architect led design-build teams accounts for very few of the design-build projects.

The design-build method essentially combines the design team (architect and engineer) and contractor into one party. A fixed price for both the design and construction is negotiated as a lump-sum. The project is then produced by the merged design and construction team that work together to determine quality of design by the specific budget.¹⁵⁴ Design-build is a popular method when the project is driven by cost and schedule.

Design-build eliminates the architect's role of enforcing the integrity and quality as the owner's representative which is typically the case in a design-bid-build delivery. Instead the owner is responsible for maintaining the level of quality they desire. A hybrid of the design-build system and the design-bid-build method is termed bridge-design-build. The bridging process involves

¹⁵⁰ Thomas, *Design-Build*, 21.

¹⁵¹ Ibid., 20-21.

¹⁵² Nancy Solomon, "The Hopes and Fears of Design-Build," *Architectural Record*, <http://archrecord.construction.com/practice/pdfs/0511hopes.pdf> (accessed February 18, 2009).

¹⁵³ Ibid., 2.

¹⁵⁴ The American Institute of Architects, *The Architect's Handbook of Professional Practice*, Student Edition, 173.

the owner to hire two architects- a design architect for the preliminary design phase and a design-build team of an architect and contractor. The design architect responds to the project like the traditional architect-owner relationship, overseeing the process of design and delivery of the design-build team.

Challenges of Design and Delivery Process

The challenge of the alternative delivery methods from traditional architectural practice in the 21st century is the architect relinquishes their project leadership, ability to quality control, and their scope of work and fees. The design-build and construction management systems place more decision making in the hands of contractors and engineers. These alternative systems of project delivery are a valued service to the client who is looking for cost, scheduling, or management expertise in the project process.

How will the architect begin to challenge the contractor and engineer for the services that were once in their control? The 21st century architect is in a challenging time. Does less accountability from the architect create better projects? A system that has more knowledgeable people involved in the project process arguably makes for the best project. However, the leader of the team should have comprehensive knowledge in both the design and construction of the projects being created. With contractors and engineers taking control over a project, design quality can be neglected. Architectural practice must be rethought to provide value for the client in cost, schedule, and quality control to compete for the leadership role in the evolving delivery methods of the 21st century.

Education and Training

Acquiring architectural education is perhaps the most important step by which the profession practices, as it fosters design values and skills for upcoming generations who will be impacting the built environment. In Crimson's, *Architecture- Art or Profession*, the education of the architect is portrayed as, "one of the major forces shaping the built environment since the end of the Second World War, perhaps the most important, has been the system of professional education through which all qualified architects have to pass." Academic education cannot be

denied its importance in shaping aspiring architects and the current conditions of the built environment.

Academic education in accredited universities is the primary means by which hopeful architects, in developed countries, are trained. After completion of a bachelor of architecture (BArch) degree or masters of architecture (MArch) degree, American architectural graduates can become licensed by satisfying the following requirements from the National Council of Architectural Registration Boards (NCARB), NAAB (National Architectural Accrediting Board), and the Intern Development Program (IDP).

- **Education:** A first professional architectural degree from a program accredited by NAAB or its equivalent
- **Training:** Compliance with the training requirements of IDP. Typically between 2-3 years
- **Examination:** Successfully passing all divisions of the NCARB Architectural Registration Exam (ARE).¹⁵⁵

These requirements set by NCARB, NAAB, and IDP are standard for all jurisdictions of the United States for licensure as a practicing architect. In addition to NAAB, NCARB, and IDP, the following organizations work together to establish guidelines, develop procedures, and safeguard licensure:¹⁵⁶

- ACSA (association of Collegiate Schools of Architecture) www.acsa-arch.org
- AIA (American Institute of Architects) www.aia.org
- AIAS (American Institute of Architecture Students) www.aias.org

Education

The education of the 21st century architect is not far removed from Vitruvius' ideals of a liberal arts degree, which includes 11 disciplines; drawing, geometry, optics, arithmetic, history,

¹⁵⁵ Pressman, *Professional Practice* 101, 32.

¹⁵⁶ Ibid.

philosophy, physics, music, medicine, law, and astronomy.¹⁵⁷ Each discipline was not to be mastered, but rather it was important to understand each area of focus with recognition of each subject informing the other.¹⁵⁸ As of 2009 NAAB has established 34 areas of understanding for graduating students. These parts include: critical thinking, research, systems, design, professional development, and ethics.¹⁵⁹

The curriculum established by schools of architecture is indicative of the broad background required to become an architect, and also illustrates the various paths a graduate can choose. The diversity of architectural education includes the study of history, theory, drawing, CAD (Computer Aided Design), technology (Structures, Mechanical, Lighting, Sustainability, etc.), professional practice, and design studio.

Training

The second phase of the training process for aspiring architects is the internship experience. The training program regulated by IDP, and required by NCARB in 1996, was established to offer a similar professional education through a mentorship that was consistent with apprenticeships and pupilage. The goals of IDP are to:

- Define areas of architectural practice in which interns should acquire basic knowledge and skills
- Encourage additional training in the broad aspects of architectural practice
- Provide the highest quality information and advice about educational, internship, and professional issues and opportunities.
- Provide a uniform system for documentation and periodic assessment of internship activities.
- Provide greater access to educational opportunities to enrich training.¹⁶⁰

¹⁵⁷ Hearn, *Ideas That Shaped Buildings*, 31.

¹⁵⁸ Ibid.

¹⁵⁹ NAAB, "2008 Procedures," http://www.naab.org/accreditation/2008_Procedures.aspx (accessed April 30, 2009).

¹⁶⁰ Pressman, *Professional Practice* 101, 272.

IDP is an internship process that typically requires a minimum of three years of architectural work experience equating to 700 training units in four different categories: *design and construction, construction administration, management, and professional and community service*. After the training units have been fulfilled, the intern is able to register for the Architectural Registration Exam (ARE). The exam consists of nine parts and tests the applicant's ability to protect the public in regards to architectural services in pre-design, site design, building design, building systems, and construction documents and services. The ARE also tests the ability to deal with social, cultural, natural, and physical forces and to other "external constraints."¹⁶¹

Education and Training Challenges

Despite the numerous subjects that an architect is required to know and the various skills needed to implement a project, many believe that architects lack business and construction expertise.

Architects have been criticized for their lack of business knowledge. Thomas Kerwin, a partner at SOM questions, "what committed architecture student would willingly interrupt precious studio time designing humanity's future to attend this semester's professional practice symposium or take time out to study boring business practices such as finance, real estate or contract negotiations?"¹⁶² It is not in the nature for most architects to study business and its effects on the quality and output of the service the business provides. As a result, many projects of value, due to the lack of intelligent business decisions, poor client interactions, and insufficient economic knowledge never "materialize."¹⁶³

In order for education to facilitate better projects and innovative design solutions, effective training in business practice is essential. However, it is unclear when a student can take on the

¹⁶¹ Ibid., 35.

¹⁶² Thomas Kerwin, "MBA: 'Making Better Architecture'?", *Design Intelligence*, http://www.di.net/articles/archive/mba_making_better_architecture/ (accessed February 15, 2008).

¹⁶³ Ibid.

study of architectural business and practice and how this addition to education could be implemented. Should learning about business be part of professional practice in firms, should business education be developed in conjunction with university education, or should architects get a separate education in studying about business? One option that many architects and executives in management positions in larger architectural firms hold is a Masters in Business Administration (MBA) degree. A MBA is a postgraduate degree that is awarded to students who have, “mastered the study of business.”¹⁶⁴ Separate study based solely on business practice and management is a valid option for more architects to pursue, albeit time consuming.

In addition to better business skills and knowledge, architects Clayton Nishikawa and Don Clifford suggest improvement in the area of estimating price and costs of building a project. With construction cost being the primary enabler and inhibitor of a project, it makes little sense that architects have such modest knowledge supporting their design decisions. Clifford and Nishikawa believe better projects can result if architects become more informed of how their design choices affect the cost of the project. In addition, having knowledge about cost can lead designers to more innovative solutions. A heightened awareness of cost can also provide and additional expertise that the client values. However, just as acquiring more business knowledge takes more time, being well versed in cost does as well.

Some would say that education is already too long, and that there is not enough time to satisfy all areas in detail. With architectural degrees phasing out the BArch for longer term Master’s and Doctorate of Architecture degrees, there is arguably less time for students to seek alternate education in all aspects of practice (design, construction, and business).

In order to create better projects, architectural education should consist of acquiring business knowledge and understanding building costs. However, the challenge remains in how to integrate additional criteria of cost and business to an already rigorous and lengthy educational process.

¹⁶⁴ Karen Schweitzer, “MBA- Understanding the MBA Degree,” About.com, <http://businessmajors.about.com/od/programcomparison/a/mbaDegree.htm> (accessed February 16, 2009).

V. Rethinking Architectural Practice

In order for architectural practice as a whole to be retooled for the purpose of creating better projects, a profession-wide evolution of attitude, purpose, and goals need to be addressed. This change can be encouraged by professional organizations that strategize the future of the profession. Professional organizations such as the AIA, are the most responsible for the current state of architectural practice, and I believe they have the capability to influence the future of the profession in its entirety. Although these organizations have the power to change practice as a whole by establishing and encouraging a set of standards and attitudes, the 21st century architect has the power to recreate a practice that doesn't conform to the status quo. As a result of alternative practice, the architect of the 21st century will be able to provide value and substance for the architectural profession through providing better projects.

My intent is to establish a means for creating value for the architectural profession that will promote its cause and provide a means for creating projects valued by the client. Increasing the value of the profession and the value of architectural design can be achieved through creating better projects for the client, the end user, and the greater public. In order to create better projects, the profession needs to evolve; requiring a rethinking of architectural practice. Creating value and creating better projects is fundamentally linked to practice.

One of the major problems with traditional practice and training is that it doesn't encourage a large number of experts. The *Architect's Handbook of Professional Practice*, outlines the start of the 21st century as the, "era of the expert."¹⁶⁵ However, Andrew Pressman describes traditional practice as a hierarchical structure with "few masters and many apprentices."¹⁶⁶ During my work experience and interviews in architectural firms, Pressman's definition of a hierarchical arrangement for me holds a disheartening truth. Successful architects and practitioners who are influencing society are those that have been working in the profession for decades and are the minority- not the majority. Young practitioners seeking a different approach invest in their

¹⁶⁵ The American Institute of Architects, *The Architect's Handbook of Professional Practice*, Student Edition, 33.

¹⁶⁶ Pressman, *Professional Practice* 101, 279.

own firms but generally stick to the same traditional path of a few masters and many apprentices. In order for the profession to be more valuable, I believe that architectural practice should evolve into a profession with a large number of masters and a small amount of apprentices.

Traditional Practice

The roles and responsibilities of the architect and the services the architect is willing to offer can differ between projects, but a few general responsibilities are standard to the design-bid-build project. Traditionally, the architect's prime responsibility is to design and document a building that meets the client's goals. Through the design process, the architect must address all building regulations and planning permissions and submit the proper plans and specifications for a building permit. In addition to the design, the architect may also assist the owner in securing a bid, selecting a contractor, and overseeing the construction phase.

As architectural practice has evolved, additional responsibilities have been added to the traditional role of the architect. These include: pre-design services, cost analysis, project management, construction management, design-build, branding, marketing, interior design, post construction services, etc. Depending on the client's needs and the knowledge and expertise of the firm, each practice can choose to take on more or less than the traditional services offered.

Every architectural practice seeks to be a master at something; whether it is a building type, a client type, a location, a process; the aim is to create worth.¹⁶⁷ By seeking mastery, the firm's work is challenging, and their business creates meaningful value for society.¹⁶⁸ To create value and worth, there are six archetypes according to, *The Architect's Handbook of Professional Practice*.

¹⁶⁷ The American Institute of Architects, *The Architect's Handbook of Professional Practice*, Student Edition, 34.

¹⁶⁸ Ibid., 41.

The Einstein archetype: Create original ideas and new technology. R&D focus.

Client Value: Cutting edge ideas or technology

Architect Practice: Norman Foster, Frank Gehry, Zaha Hadid, Santiago Calatrava

The Niche Expert archetype: Specialists in a specific type of project or service.

Client Value: Unsurpassed leadership in a specific area

Architect Practice: HOK Sport, Duany Plater-Zyberk

The Market Partner archetype: leader of one or a few major markets.

Client Value: Service depth within a market area

Architect Practice: ADP Marshall, WATG, Fanning Howey

The Community Leader archetype: Leader in the community.

Client Value: Aligned commitment to community

Architect Practice: Carde Ten Architects

The Orchestrator archetype: Outstanding project management. Focus on speed + coordination.

Client Value: Skilled project management for larger, complex projects

Engineer-Contractor Practice: Bechtel, Fluor-Daniel

Program Manager: Heery International, 3D- International, and CRS Constructors

The Efficiency Expert archetype: Cost and speed advantage firms, quality management

Client Value: Cost, quality, and consistency

Architect Practice: BSW International

Source: The Six Archetypes from The American Institute of Architects, *The Architect's Handbook of Professional Practice*, 33.

Architectural practice has led to the development of specialist architects that provide value to the client's demands. For clients looking for specific knowledge and leadership in a building type or market area, the client commissions a *niche* or *market* archetype. For the client that is seeking efficiency, organization, and quality control over the duration of the project, the client

commissions an *orchestrator* or *efficiency expert* archetype to design their project. The two niche/market archetypes and the orchestrator/efficiency expert archetype are comparable to the specialist and the generalist architects. Specialists correspond to niche and market archetypes, and generalists parallel the qualities of the orchestrator and efficiency expert archetype. Both types provide a different set of values, but that together are important to the overall success of the project.

Rethinking Practice

The challenge of architectural practice is incorporating the knowledge of both the specialist and generalist archetype into a single project. Clayton Nishikawa, an architect who owns a design-build firm and architect Don Clifford who operates an architectural business offering services from planning to construction management, believe their generalist practices create better projects because they are able to influence the project from pre design through post construction. Design architects believe they can create better projects because of their specialized and specific knowledge in a building type or practice area. The combined value of leadership in a specific practice area, skilled project management, cost, quality, and consistency should be obtained in every project. The collaboration between a generalist architect and a specialist architect would ultimately create additional value for the client, elevate the excellence of the profession, and create better projects for society.

I believe architectural practice needs to restructure the relationship of both the generalist and specialist architect types to form a collaborative effort within the architecture industry. The challenge for traditional practice is acquiring the knowledge to be specialized and managing the building process, controlling the design and build quality, understanding cost, minimizing risk, being efficient, communicating with the client, and producing the design documents. Currently there are very few architecture firms that are able to supply this holistic knowledge and service. Satisfying all these requirements takes either a very large office with a multidisciplinary approach to practice, or collaboration between multiple offices and industry professionals. In order to bypass obtaining multiple expert knowledge and skill and having to set up a large practice, I envision a future collaborative process for 21st century architectural practice.

In Fisher's citing of Paul Starr and his book, *The Social Transformation of Medicine* (New York: Basic Books, 1984) Starr analyzed the similarities between the medical profession in the 19th century and the current state of architectural practice. Starr noted the oversaturation of the general practitioner in the medical field that did not have an extensive specialized knowledge and goes on to state that the same is true for architectural practice.¹⁶⁹ The medical profession was once undervalued in society because the practitioner could do little to save a person's life. The response was to transform "[the medical profession] into a more research-based discipline" and align its mission with hospitals.¹⁷⁰ As a result, the public began to value and respect the services and expertise of the profession.

Thomas Fisher's conclusion about the evolution of the medical profession begins to address the challenge of collaborating the strengths and expertise of the generalist architect and specialist architect. In medicine, a general practitioner oversees a large number of patients to diagnose their symptoms and offer advice on where to seek specialized treatment. Fisher sees architectural practice being aligned in a similar way where a general practitioner architect works with a large number of clients and diagnoses the building performance on a scheduled basis noting the particular areas that need addressing or improvement. The general practitioner architect could then design a team of specialist (architects and engineers) that would accommodate the client's needs.¹⁷¹ I believe that Fisher's correlation to the medical profession begins to rethink practice. This collaborative effort between a specialist and generalist also has the potential to offer a means for providing projects of quality, recapturing the leadership role, and establishing design value for the public.

As an alternative to traditional practice, using Fisher's general practitioner – specialist relationship as a starting point, I envisage education producing two types of architects- a *project architect* and a *design architect*. Ideally, the two architects work together toward a common goal of assisting the client in developing projects of substance and quality.

¹⁶⁹ Pressman, *Professional Practice* 101, 272.

¹⁷⁰ Ibid.

¹⁷¹ Ibid., 273.

The Project Architect

Role and Responsibilities

The *project architect* (PA) will be responsible for communicating and overseeing the project process from an architectural, construction, and business standpoint. The PA will be involved in the project process from pre design to post construction. The PA will be the expert in developing client relationships as well pre design and post construction knowledge; specifically cost, quality, efficiency, and maintenance. The PA would not be the architect of record and is not the director of the primary design phases of the project, but could become invested in the project as the builder. One of the current challenges is addressing the evolving delivery process such as design-build. By introducing the PA, an architect will have the educational and professional training to be a leader in a design-build delivery process.

The PA's client base will be broad- essentially consisting of anyone who owns a building or a piece of property, and individuals requiring expert advice about architecture. The PA is visible and will become invested in all project types, scope, size, and budget. In addition, the PA's role and responsibility will be to increase awareness of the value of architectural expertise and design and actively market the profession.

Client Value

The value of the PA will be similar to a construction manager's (CM) or project manager's (PM) role in a project. In addition, there is a possibility for the PA to provide construction service. The PA's role as a leader and ability to oversee the project from beginning to occupancy and maintenance will be additional benefits for the client. The PA will be an expert in architectural business and construction with a background in architecture. By having the PA involved throughout the entirety of the project acting on behalf of the client, changes to the project will remain consistent and have a higher possibility of maintaining a design's original intent.

The Design Architect

Role and Responsibilities

The *design architect* (DA) will be the research expert of the architectural profession. Their education will consist of the same core requirements as the PA, but will emphasize a secondary education in a specific study of architectural design. Design schools will be formed to develop innovation in practice areas and building types through research and development (R&D). Being more involved in the fabrication and development of building components and becoming knowledgeable about a particular project type will enable better projects. In addition, having the necessary background about building parts, will indicate to the builder and client that the architect is considering more than the design.¹⁷²

Client Value

The DA's value will be providing expert knowledge in the design and construction of their practice area. George Heery said, "Architects have ceased to represent the cutting edge of construction technology and the most practical way of building buildings."¹⁷³ Architects must recapture this knowledge in designing for buildings in the 21st century if they are to be of value, and the DA will be the leader in developing new ideas and technologies.

A Process for Creating Better Projects

The *project architect – design architect* strategy will essentially create a complimentary practice that is both client based (generalist/project architect) and research based (specialist/design architect). The challenge of the 21st century is to be able to simultaneously address the client's goals and expectations while being able to create better architecture through research & development. The contemporary architect is unable to focus on all aspects of the profession. Specializing within the industry will be essential to keeping up with the technologies and complexities of architectural projects in order to elevate the quality of built developments. The generalist will be important to the profession as the overseer and supervisor of the entire project. Providing a generalist entity within architectural practice will strengthen the

¹⁷² Ibid., 315.

¹⁷³ Ibid., 288.

business/management, cost, construction, and design relationship of a project. A project's success and ultimate value will be enhanced as the two architect types work together utilizing and collaborating their knowledge and strengths.

The collaborative process I envision begins with the PA encompassing the client's goals of the budget and schedule and providing other pre-design services such as programming, site-analysis, and strategic facility planning. Based on the criteria established in the pre-design phase, the PA will recommend an appropriate DA to carry out the design process. As the project gets handed off to the DA, the PA remains involved as an overseer of the design process, making sure that the client's goals are aligned with the DA's vision. Because the PA will have a background in architectural education, the PA will be capable of maintaining the design intent of the DA while being knowledgeable about cost effectiveness, both of value to the client as well as heading in the direction of establishing a quality project.

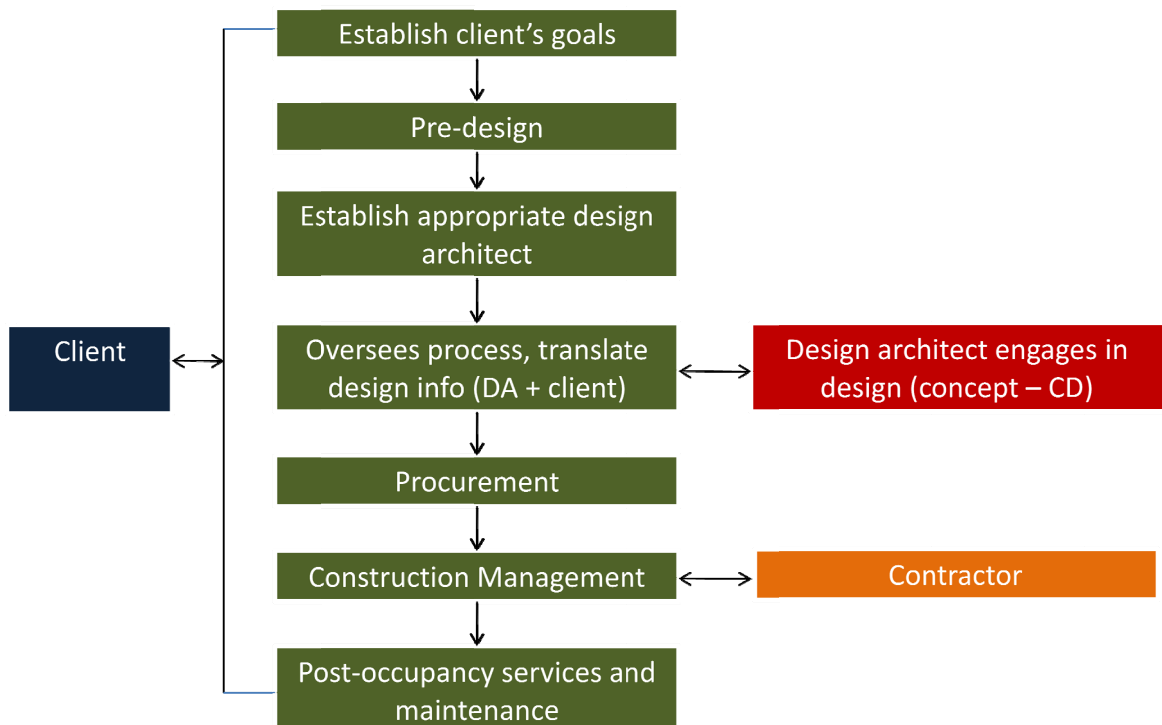
After the project has left the hands of the *design architect*, the PA is responsible not only for understanding and maintaining the design integrity, but will also manage the procurement and construction phases. Here, the PA's training in business, cost, and construction will provide value to the client. Once the project is complete, the PA will offer his services throughout the lifetime of the project. On one hand, the PA will engage in post-occupancy studies to understand the strengths, weaknesses, opportunities, and threats of the final product. By accumulating this type of knowledge, and translating the information across the board to the DA's affiliated with the PA firm, architects will have the means to improve their projects. In addition to performing post-occupancy studies, the PA firm will help to maintain the building by providing architectural expertise on required fixes, changes, or additions. A lengthened relationship with the building will encourage a greater responsibility of the PA and will help to carry out the integrity of the design when any changes are needed. This role also supports the goal of providing better environments.

In short, the PA will focus their efforts on architectural services by developing closer relationships with owners, clients, and the public. They will be the entity that seeks out a client base and markets the value and potential of the profession. The PA's position in the project's

process begins to recapture the leadership role for the architect and establishes a champion to promote architectural services. Although the project delivery strategy of design-build provides the possibility of an architect recapturing the role as leader, architects are challenged with an aversion to risk. The PA, trained in business or construction will be more knowledgeable and more capable of taking on this position of becoming the builder of the project.

The *design architect's* main focus will be on design and product with less emphasis on client relationships, business, practice, etc. Architecture believes itself to be innovative, and design is certainly the architects most valued asset. A large number of senior architects with comprehensive knowledge about design and cost end up in managerial positions. These more experienced architects typically focus their time and effort working with clients, going to business meetings, and managing the firm- all of which are crucial to the success of the business. In this new collaborative practice, the design architect can rely on the PA to foster and promote the business of architecture, establish and maintain clientele, and oversee the project process. As a result, the DA can then allocate their time and efforts to design ingenuity.

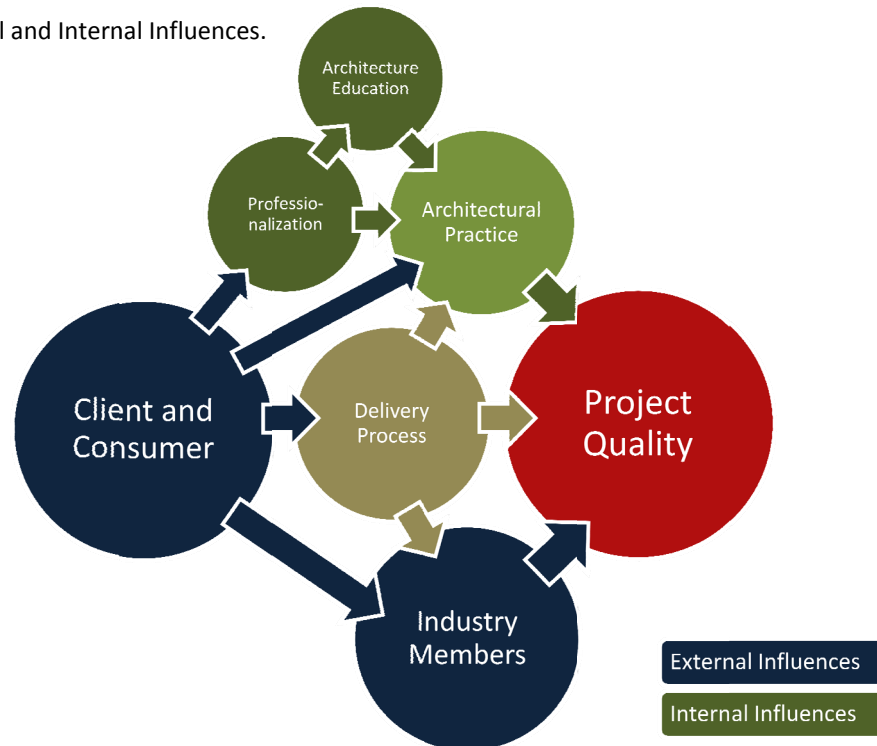
Figure 1. Project Process Diagram.



Challenges and Response

The alternative practice of a *project architect - design architect* collaboration aligns with the five influences on practice. In addition, the alternative process illustrates how practice can support the development of better projects, but goes on to explain how the DA-PA strategy ultimately creates value for the profession.

Figure 2. External and Internal Influences.



This diagram illustrates how the five influences impact architectural practice which ultimately affects the project quality of the final built product. The diagram begins with the external influences on the profession- the client and consumer that subsequently impact the other major factors within the profession.

Client and Consumer

The challenge for the architect is being able to guide the decisions of the client, assisting them in making proper choices based on cost, design, and construction. For the indirect consumer, the

challenge is making better decisions for buildings and environments they will be occupying. However, the architect/designer of the 21st century is typically not well versed in cost and construction. Architects need to somehow offer expertise in the areas of cost, construction, and design in order to provide value to the client and to guide them in the direction of creating projects of greater quality.

The alternative *project architect/design architect* practice assists the client in making proper choices on cost, construction, and design by including two types of architects in the project process: the DA who specializes in design and the PA who is knowledgeable about cost and construction. The PA is in charge of managing the project; assisting in planning, cost, preliminary design, possibility of construction, and post-construction/lifespan of the building services. The DA is the Architect of Record (AOR) that prepares the design documents. The DA's value is also a specialized knowledge of the design of a building type or practice facilitated by research and development. The combination of these three areas of expertise in one entity, architectural practice, will guide clients to make more thoughtful decisions regarding design and the built environment.

Industry Members

The architect is challenged with creating a greater value outside of design and as a result needs to create a greater demand for their services. Cost, construction, and quality control are the strengths of the contractor and engineer and they are providing these valued services to the client that ultimately affect project quality. Engineers and contractors are making design decisions that may not be their expertise. How can the 21st century architect create a demand for cost, construction, and quality control services that competes with contractors and engineers? In addition how can the architect be distinguished, in terms of design, construction, vision, and creative value, from other industry professionals?

The alternative practice places the PA in a better position to challenge the contractor and engineer through a management role or a builder role. The PA through specific training in construction and/or the business in addition to design will be well valued. The "master builder" archetype will be retooled through the project architect. In addition, the PA has the potential to

form closer relationships with the community and governmental institutions. This will increase the current client base by marketing the services and value of the architectural profession and create a greater demand for architectural practice.

The design architect is better positioned to create a greater demand for service by focusing solely on the design creativity and less on client services, overseeing the construction process, etc. Creativity, vision, ingenuity, and inventiveness are the greatest value of the architect's service in the 21st century. This value will increase through the DA's ability to create better design. By providing two types of architects working collaboratively, the profession is able to offer the client a similar expertise to the contractor through the PA. In addition, the DA provides an extended value of specific design expertise which sets architectural practice apart from contractors and engineers.

Professionalization

The major challenge facing professionalization is how to promote good design and create a value for the architect's services. Good design in the 21st century is viewed as a luxury not as a necessity. Professionalization and architecture will need to further promote good architecture just as law and medicine have done for their professions. In addition to promoting architecture, professionalization struggles to enforce the making of ethical decisions.

Creating an organization similar to Britain's CBE that actively promotes and assists clients and consumers with building would be part of the solution. Policy making in government to demand "good design" in addition to protecting the public's health, safety, and welfare could also effectively promote better architecture in addition to professional organizations. In conjunction with additional organizations that unbiasedly promote the value of architecture and design, the PA will actively promote the profession through business and marketing skills. The alternative *project architect* and *design architect* can promote good design simply by having a practice that supplements creating better projects. Better projects equal more exposure to design value for the public and community.

The alternative strategy also sets up a client selection process that aligns a client's goals and vision with the *design architect's* standards. The *project architect's* initial understanding of the client's requirements will aid in matching up the client with an appropriate specialist. With the DA and client sharing a similar vision for design and project quality, the unethical choosing of a client for financial gain will be eliminated thus leading to the creation of better projects.

Design and Delivery Process

The leader of each architectural project influences the quality and performance of the building that is created throughout the process. The traditional procurement route allows for a joint leadership of the architect during design and the contractor during construction. The design-build method is led almost exclusively by the contractor and some engineers. The challenge for the architect is to have the expertise to be the leader throughout the design and construction process. This means at some point, the architectural entity needs to be knowledgeable about construction.

The alternative practice I suggest allows architects to reestablish their role as project leader. The PA, through construction and business, will be capable of leading a project from pre-design to construction. Although a PA will acquire a background in architecture, a PA's efforts are not concentrated on design. A PA will, however, be able to provide a comprehensive understanding of the project's process. What will be of value is the PA's ability to communicate and translate the DA's vision from design to construction. Becoming the leader of the project will enhance a project's quality as the overseer will be making decisions based on cost, construction, and design.

Education and Training

Education is the beginning of training which affects the architect's conception about quality, attitude, ethics, design, practice, engineering, and construction. Education affects project quality by providing the architect with the training that will impact the entire process of architectural practice. The challenge is to educate architects to be well prepared and knowledgeable to create the best architecture. I believe the most complete architect would include a collective knowledge of planning, design, construction, engineering, cost, and

business. But of course the architect would be well into his later years before finishing a degree with the requirements listed. However, the challenge remains in how to integrate additional criteria of cost and business to an already arduous educational system.

The future of education for the architectural profession rests in a joint collaboration between universities, architectural practice, and professional organizations such as the AIA and NAAB. From the perspective of the alternative practice of the *project* and *design architect*, this strategy begins to encourage a more focused approach to practice. The architect that wants to focus on management, construction, and the business end of practice can do so during education at the university level. The architect who would like a career in the design and research discovery practice of architecture can focus their efforts in this area. Having a broadened, yet specific architect type/practice allows education to encourage and produce more knowledgeable and well-rounded architects.

Again, the alternative strategy sets up two types of expertise in a singular profession. Students aren't required to take on the study of cost, business, and construction in addition to design. Therefore, the educational system is not lengthened or made more difficult, but the way practice is formulated becomes altered to suit the demands of the aspiring architect. It is the new practice that will allow for experts in architecture to develop which will ultimately result in projects of higher caliber.

Other Suggestions on Education

Donald Goo, FAIA, a past principal, former president and CEO, and now senior advisor for Wimberly Allison Tong & Goo (WATG) believes that the next generation of architects needs to find ways of "getting there faster." Goo states that "getting there" is being able to influence creative decision making and positively influencing projects being built. Goo believes that architects need to be experienced in a variety of areas from design to construction to make better decisions.

Clayton Nishikawa, the principal and owner of Architectural Design and Construction (ADC), believes that architects can "get there faster" if education and training focuses on developing

specialists that can benefit the firms they work for. Nishikawa explains that graduates who apply to his firm don't have sufficient training to make a difference immediately out of university. He suggests a core education in architecture in addition to a specific graduate study in design and construction, developing, business, etc.

VI. The Architect's Path

The Traditional Path

The career paths available to an architect during their career are numerous because of the broad education and training of architectural education. In addition to the many job opportunities in architecture, architects have transitioned into other jobs such as planning, engineering, and construction within the building industry. Here is a list of careers in architecture related fields compiled by Jackie Craven.

Architecture Offers Many Career

Choices: Jackie Craven

Architectural Journalist	Mechanical Engineer
Architectural Historian	Surveyor
Corporate Architect	Technical Illustrator
Draftsperson	Urban Planner
Building Researcher	Art Director
Building Inspector	Fashion Designer
Building Contractor	Furniture Designer
Carpenter, Cartographer	Graphic Designer Illustrator
Architectural Engineer	Industrial Designer
Civil Engineer	Interior Designer
Industrial Engineer	Set Designer
Marine Architect	Real Estate Broker

Source: What can I Do with a Major in Architecture? From Jackie Craven, "Architecture Offers Many Choices," About.com, <http://architecture.about.com/cs/careers/f/architectdo.htm> (accessed March 02, 2009)

Robert Douglass, FAIA, did a study of 70 people trained by formal education or professional registration in architecture, who made their careers not in traditional architectural practice. Douglass classified through this study two groups of people, the "seekers" and "solvers." The "seekers" Douglass refers to as reflective, intuitive, and aesthetically oriented; they were the writers, artists, inventors- they seek creativity. The "solvers" are more tasks and results oriented and were in a construction related field; they were the financiers, real estate

developers, construction managers, general contractors, or design-builder- they value financial gain and business.¹⁷⁴

Implications for Architectural Careers

The “Maverick” careers in the study by Robert Douglass, FAIA, included:

Advertising	General Contracting
Art and Illustration	Historic Preservation
Construction and Program Management	Imagineers
Congressman, Deputy, Mayor	Industrial Light and Magic (Fx)
Design-Build	Law*
Digital Photography	Management Consulting*
Editors, Authors, and Critics	Manufacturing
Environmental Graphics	Manufacturers’ Representation
Environmental Planning	Marketing, Advertising, Public Relations
Executive Search	Photography
Exhibit Design	Private Investigator
Facility Management	Product Development and Marketing*
Facility Planning Consultation (i.e., industry specializations such as health care, research labs, fire protection, energy management, materials handling, and so on)	Public Relations
Fashion Design	Real Estate Development*
Financial Services*	Theatrical, Scenic, and Production Design
Forensic Architecture and Investigations	Rock Tour Manager
Furniture Design	Video Animation
	Virtual Reality Imaging
	Yacht and Cruise Liner Design

*Additional Degree required or often needed such as an MBA

Source: The Implications for Architectural Careers from Pressman, *Professional Practice* 101, 272.

Of the reasons for those surveyed leaving architectural practice, nearly all electively chose to pursue another direction. They chose to go other routes because some expressed dislike/bitterness toward their negative experience with the jury process in education. Others

¹⁷⁴ Ibid., 320-323.

couldn't make enough money, while some responded with, "I became convinced that... architectural design was almost trivial."¹⁷⁵ Clayton Nishikawa had a similar response to why his office does not run in a traditional sense and evolved into a design-build firm. Nishikawa said he felt compelled to do so because he saw a demand, and at the same time the possibility of making more money and gaining a little more respect was also a motivator.¹⁷⁶

Douglass asked the question, "When somebody says what you do, what do you tell them?" The majority answer with "I'm an Architect," while one responded with, "I say I'm a retired architect." Interestingly, those trained in architecture, but are doing something else because of choice still refer to themselves as an architect. I believe for those trained in the profession the affection for architecture remained, but the desire to work in a traditional practice did not. Architectural practice needs to be rethought not only to build better projects, but also to make the process a more enjoyable experience for architects to cherish as much as they do the good architecture that is created.

Future Path

Taking Douglass' labeling of the "seeker and the solver", the path of the architect should accommodate both types of architects into complimentary practices. Today, the seekers and solvers work together within architectural practice and there are clear benefits to this path of learning from each other. However, Robert Gutman's statement, "There are more disillusioned, alienated, disappointed men and women in architecture than in any other major profession," is the reality of practice.¹⁷⁷ The "seeker" and "solver" types correspond to the "project" and "design" architect types developed in the previous section.

¹⁷⁵ Ibid., 324.

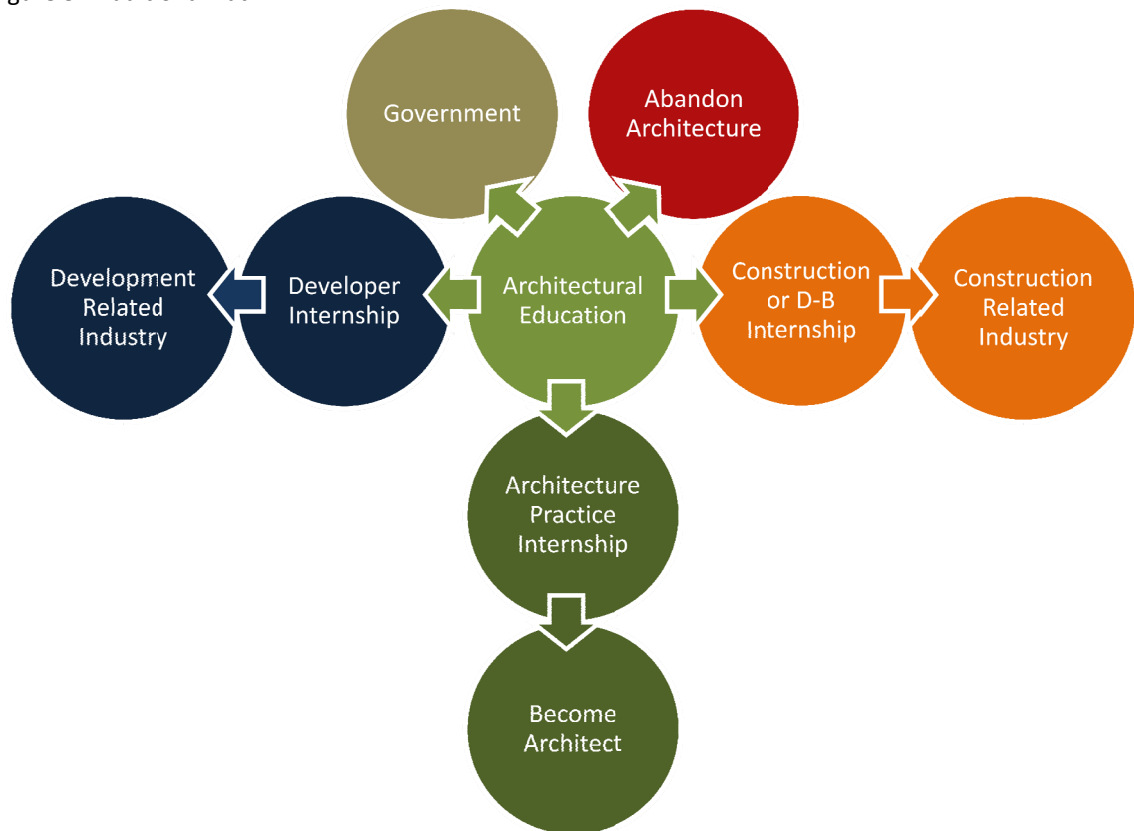
¹⁷⁶ Nishikawa, interview.

¹⁷⁷ Gutman, *Architectural Practice*.

Traditional Path

The traditional path is very flexible within the design and construction industry. Following architectural education, graduates are able to enter into a career in architecture, construction, development, government, or pursue an alternative path outside of the profession.

Figure 3. Traditional Path.



Future Architect Path

The challenge with the traditional path is education trains a generalist architect, but architectural practice in the future is only becoming more specialized in building type, process, or client type. The future path of an architect requires a process that responds to the diverse makeup of the architect's persona. Douglass' take on the "solver and seeker" is the essence of the profession; and a path that develops and fosters their talents must be better realized. A path that educates and trains architects to become specialists and a process that allows the

project architect and the *design architect* to develop their strengths begins to answer the challenges of the profession. Figure 4, illustrates the two architect types of the PA and DA and how they collaborate to impact the project's phases.

Figure 4. Future Path.



VII. Conclusion

The term architect in the 21st century is associated with other industries and professionals outside of architectural practice. Other professionals and individuals use the term architect when referring to a person who is a leader, an overseer, a creator, inventor, and a visionary among other distinguished attributes. The public holds the label of architect in high regard. The architect as referenced in the design and building industry is also upheld to high ethical and moral esteem and is a respected individual understood as being the creative mind behind a building's design.

In contrast, the professional practice of architecture is not held in the same regard as the persona of the architect. Architectural practice can be characterized as time consuming, underappreciated, undervalued, and an underpaid profession. Architecture is a professional practice that requires high levels of training and education similar to law and medicine. However, the value of its service and level of compensation are, on average, significantly lower than other professionals. Why are the label and characterization of the term architect held in higher regard compared to the practice of architecture? What needs to improve for architects to be highly valued, have a positive impact on society, and be rewarded accordingly?

The practice of architecture has evolved its focus, training, and services throughout history in search for its identity and role in society. Prior to professionalization in the 19th century, the architect was the leader and overseer of the design and construction of a project. The architect was the technical engineer, designer, and builder all in one. However, as the building industry increased in complexity and risk, the architect took on less responsibility. As a result, the architect's control over the project lessened. In the 21st century, the architect dedicates their services to the projects that are most lucrative and recognizable. In addition, many view architecture as a luxury, rather than as an indispensable service.¹⁷⁸

¹⁷⁸ Diane Yvonne Ghirardo, ed., *Out of Site: A Social Criticism of Architecture* (Seattle: Bay Press, 1991), 31, quoted in Johnson, *The Theory of Architecture*, 124

The leadership role of the architect has been threatened by contractors and engineers who can provide similar services. Advocates of the architect believe that the architect should take on a leadership role to implement the overall design of a project. This includes commanding the design team of engineers, draftsmen, consultants, and builders as it once did in the past. Recapturing the role currently shared with engineers and contractors is believed to be vital for architect's to compete for projects, to create value, and to protect the longevity of the profession.

Opponents argue that architects are a “marginal” profession.¹⁷⁹ As an architecture student, I agree that architects are challenged to satisfy the needs of society. Current architectural practice allows projects to be led and executed by engineers and contractors because of the value they can offer to the client. “Meeting society’s needs,” in the 21st century is understood differently from the past. As construction, operating, and maintenance costs have soared, the client’s desire for cost savings and efficiency are arguably at an all time high. The demand for quality design, which is perhaps the architect’s greatest asset, is being overshadowed.

Part of the reason architects have been losing out to other industry professionals is because the profession is challenged with providing expert knowledge in three essential categories: business, design, and construction. Greg Pasquarelli of ShoP Architects believes, “the practice of architecture in the future will require architects to become experts beyond design.”¹⁸⁰ The *project architect* and *design architect* collaboration is one way of providing a foundation for architectural practice that encourages experts of design as well as experts beyond design. The future of practice lies in the ability to develop a profession of many masters.

For architects to influence the projects that will be designed and constructed in the future, I believe it is necessary for architects to rethink architectural practice. By understanding the needs of society, architects can be rewarded appropriately, be highly valued for the services they provide, and create better projects. Since quality projects and good design are the result of talented individuals, I believe that rethinking practice to enhance the vision, creativity,

¹⁷⁹ Ray, *Architecture and Its Ethical Dilemmas*, 5.

¹⁸⁰ Pressman, *Professional Practice* 101, 317.

collaboration, and leadership of architects will lead to the development of better quality projects. The rethinking of practice should be adjusted with the goal of promoting better projects, better architecture, and a better environment for everyone.

The strategy of having both a *project architect* and *design architect* begins to answer the demands of the client and consumer by offering expert knowledge in design, construction, cost, and maintenance of a project. Therefore, architects will be more equipped to compete with industry members; offering more than “design”. In addition to professional organizations that promote architecture, the PA will promote “good design” and the value of the architect by developing a larger client base. The PA/DA practice recaptures leadership responsibilities of the architect through readjusting the design and delivery process. Lastly, a PA/DA practice allows architects, trained in design or cost, construction, and maintenance, to have a collaborative architectural vision. The future of architectural practice should be a collaborative framework that supports the creation of better projects.

VIII. Bibliography

Ballantyne, Andrew, ed. *What Is Architecture?* London: Routledge, 2002.

Bauman, Irena. "Should I care for the high street?." BD: the Architects' website.
<http://www.bdonline.co.uk/story.asp?sectioncode=452&storycode=3128046&c=1>
(accessed February 13, 2009).

Blau, Judith R, Mark La Gory, and John Pipkin, eds. *Professionals and Urban Form*. Albany: State University of New York Press, 1983.

Blau, Judith R. *Architects and Firms: A Sociological Perspective on Architectural Practices*. Cambridge: The MIT Press, 1984.

Bolton, Arthur. *Architectural Education a Century Ago*. London.

CABE. "What we do." <http://www.cabe.org.uk/default.aspx?contentitemid=160> (accessed February 15, 2009).

Clarke, Robert W. *The Power of the Professional Person*. New York: University Press of America, 1988.

Colquhoun, Alan. *Modernity and the Classical Tradition: Architectural Essays, 1980-1987*. Cambridge, Mass: MIT Press, 1989.

Cramer, James P. *Design Plus Enterprise: Seeking a New Reality in Architecture*. Washington, D.C: American Institute of Architects Press, 1994.

Crinson, Mark, and Jules Lubbock. *Architecture: Art or Profession? : Three Hundred Years of Architectural Education in Britain*. Manchester: Manchester Univ Pr, 1994.

Cuff, Dana. *Architecture: The Story of Practice*. Cambridge, Mass: MIT Press, 1991.

Davies, Paul, and Torsten Schmiedeknecht, eds. *An Architect's Guide to Fame*. Oxford: Elsevier/Architectural Press, 2005.

"Design Quality Indicator (DQI) - The catalyst for providing better buildings," November 14, 2008. <http://dqi.org.uk/DQI/default.htm>.

Dictionary.com. "Builder Definition." <http://dictionary.reference.com/browse/builder> (accessed September 25, 2008).

Egbert, Donald D. *The Beaux-Arts Tradition in French Architecture*. Limited Ed. New Jersey: Princeton Univ Pr, 1980.

Filler, Martin. *Makers of Modern Architecture*. New York: New York Review Books, 2007.

Ghirardo, Diane Yvonne, ed. *Out of Site: A Social Criticism of Architecture*. Seattle: Bay Press, 1991.

Gimpel, Jean. *The Cathedral Builders*. New York: Grove Press, 1961.

Goldthwaite, Richard A. *The Building of Renaissance Florence: An Economic and Social History*. Baltimore, Maryland: The Johns Hopkins University Press, 1982.

Grafton, Anthony. *Leon Battista Alberti: Master Builder of the Italian Renaissance*. 1st ed. New York: Hill and Wang, 2000.

Gutman, Robert. *Architectural Practice: A Critical View*. Princeton, N.J: Princeton Architectural Press, 1988.

Hanson, Brian. *Architects and the "Building World" from Chambers to Ruskin: Constructing Authority*. Cambridge, UK: Cambridge University Press, 2003.

Hearn, Fil. *Ideas That Shaped Buildings*. Cambridge, Mass: The MIT Press, 2003.

Jencks, Charles, and Karl Kropf, eds. *Theories and Manifestos of Contemporary Architecture*. West Sussex: Academy Editions, 1997.

Johnson, Paul-Alan. *The Theory of Architecture: Concepts, Themes & Practices*. New York: Van Nostrand Reinhold, 1994.

Kerwin, Thomas. "MBA: 'Making Better Architecture'?" *Design Intelligence*. http://www.di.net/articles/archive/mba_making_better_architecture/ (accessed February 15, 2008).

Kostof, Spiro. *A History of Architecture: Settings and Rituals*. 2nd ed. New York: Oxford University Press, USA, 1995.

Lewis, Roger K. *Architect?: A Candid Guide to the Profession*. Cambridge, Mass: MIT Press, 1985.

- Mark, Robert. *Experiments in Gothic Structure*. Cambridge, Mass: The MIT Press, 1984.
- McEwen, Indra Kagis. *Vitruvius: Writing the Body of Architecture*. The MIT Press, 2002.
- Merriam-Webster Online Dictionary. "Architect Definition." Merriam-Webster.
<http://www.merriam-webster.com/dictionary/architect> (accessed November 06, 2008).
- Murphy, Kevin D. *Memory and Modernity: Viollet-Le-Duc at Vézelay*. University Park, Pa: Pennsylvania State University Press, 2000.
- NAAB. "2008 Procedures." http://www.naab.org/accreditation/2008_Procedures.aspx (accessed April 30, 2009).
- Portman, John Calvin. *The Architect as Developer*. New York: McGraw-Hill, 1976.
- Pressman, Andrew. "Creating a firm culture that supports innovative design." Architectural Record. <http://archrecord.construction.com/practice/firmCulture/0802firm-1.asp> (accessed February 18, 2009).
- Pressman, Andy. *Professional Practice 101: Business Strategies and Case Studies in Architecture*. 2nd ed. Hoboken: Wiley, 2006.
- Ray, Nicholas, ed. *Architecture and Its Ethical Dilemmas*. London: Taylor & Francis, 2005.
- Riani, Paolo. *John Portman*. Washington, D.C: American Institute of Architects Press, 1990.
- Saint, Andrew. *Architect and Engineer: A Study in Sibling Rivalry*. New Haven [Conn.]: Yale University Press, 2007.
- Schweitzer, Karen. "MBA- Understanding the MBA Degree." About.com.
<http://businessmajors.about.com/od/programcomparison/a/mbaDegree.htm> (accessed February 16, 2009).
- Segal, Paul. *Professional Practice: A Guide to Turning Designs into Buildings*. 1st ed. New York: W.W. Norton, 2006.
- Sharp, Derek. *The Business of Architectural Practice*. London: Collins, 1986.
- Smith, Thomas Gordon. *Vitruvius on Architecture*. New York: Monacelli Press, 2003.

Solomon, Nancy. "The Hopes and Fears of Design-Build." *Architectural Record*.
<http://archrecord.construction.com/practice/pdfs/0511hopes.pdf> (accessed February 18, 2009).

Spector, Tom. *The Ethical Architect: The Dilemma of Contemporary Practice*. New York: Princeton Architectural Press, 2001.

The American Institute of Architects. "History of The American Institute of Architects."
http://www.aia.org/about_history (accessed November 08, 2008).

---. "How Design Works for You." AIA. <http://howdesignworks.aia.org/> (accessed February 7, 2009).

The American Institute of Architects. *The Architect's Handbook of Professional Practice, Student Edition*. 13th ed. New York: Wiley, 2001.

Thomas, Andrew. *Design-Build*. 1st ed. West Sussex: Academy Press, 2006.

Timberg, Scott. "Retooling Form and Function." *Los Angeles Times*.
<http://www.calendarlive.com/galleriesandmuseums/cl-ca-fabrication19mar19,0,4782237.story> (accessed March 18, 2009).

Viollet-le-Duc, Eugène-Emmanuel. *The Architectural Theory of Viollet-Le-Duc: Readings and Commentary*. Cambridge, Mass: MIT Press, 1990.

Wiebenson, Dora, ed. *Architectural Theory and Practice from Alberti to Ledoux*. Chicago: Architectural Publications, 1982.

Wikipedia: The Free Encyclopedia. "Architect." Wikipedia.
<http://en.wikipedia.org/wiki/Architect> (accessed September 25, 2008).

---. "Design Quality Indicator ." Wikipedia.
http://en.wikipedia.org/wiki/Design_Quality_Indicator (accessed April 30, 2009).

---. "Industrial Revolution." Wikipedia. http://en.wikipedia.org/wiki/Industrial_revolution (accessed November 23, 2008).

---. "Treatise ." Wikipedia. <http://en.wikipedia.org/wiki/Treatise> (accessed October 07, 2008).

Wolf, Roberta. *How to Become a Developer*. Novato, Calif.: Crittenden Books, 1984.